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Measurements of Ocean Currents Across the Continental Margin off Pt. Sur, California, during January, 1990

by

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December 1990

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The primary focus of this paper is the poleward flowing Davidson Inshore Current which transports warm (13 deg C) and saline (33.4 psu) water northward. The current was located 20-120 km offshore of Pt. Sur, with a maximum surface velocity of 34 cm/s located 20-40 km offshore. Alongshore transport was calculated to be 8.3 Sv. Comparison with data from a February 1989 cruise along the Pt. Sur transection revealed a 50 km offshore shift in position and a velocity increase of 4 cm/s for the Davidson Inshore Current.

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Measurements of Ocean Currents Across the Continental Margin off Pt. Sur, California, in January 1990

by

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Lieutenant, United States Navy
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Submitted in partial fulfillment of the requirements for the degree of

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During the week of 17 to 24 of January, 1990, the **R/V Pt. Sur** conducted a hydrographic and current survey in the vicinity of Pt. Sur, CA. The ship collected data along a transection across the continental margin which began 2.5 km offshore and extended along parallel 36° 20' N. At 123° W, the transection turned towards the southwest and extended out to a point some 220 km offshore. Data were collected using CTD, PEGASUS (acoustic dropsonde), and ADCP (Acoustic Doppler Current Profiler) instruments.

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The data also covered the eastern edge of the equatorward flowing California Current between 120 and 180 km offshore. In addition, a warm-core anticyclonic eddy was located beyond 180 km from shore which was confirmed by an AVHRR image from the NOAA 11 satellite.

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DEDICATION

I wish to dedicate my thesis to my lovely new bride, Sharon, and to my beloved parents, Roger and Millie, whose love and devotion have sustained me throughout all my trials and tribulations.

I wish to thank Dr. Collins, Prof. Batteen, Tarry Rago, Paul Jessen, and Dan Tracy for their support, hard work, and patience, without which this thesis would not have been possible.

I. INTRODUCTION

Off Pt. Sur, California, the flow along the continental margin is dominated by two opposing currents. The offshore (100-300 km) California Current flows equatorward bringing cool, fresh subarctic water from the North Pacific. The California Undercurrent is a poleward flowing inshore counter-current of the California Current. The California Undercurrent brings warm, saline water from the Eastern Equatorial Pacific in a meandering path over the continental margin with velocities on the order of 23 cm/s (Reid 1962). During winter months, the California Undercurrent migrates to the surface (Hickey, 1979) and is then officially known as the Davidson Inshore Current (U.S.N. Marine Climatic Atlas of the World, North Pacific Ocean, 1977, and U.S. Coast Pilot, Vol. 7, 1989). The current is also commonly referred to in scientific literature simply as the Davidson Current (Reid and Schwartzlose, 1960). It is the kinematic structure of the Davidson Inshore Current which is the primary focus for analysis in this paper.

The Davidson Inshore Current was named by George Davidson, the chief surveyor of the Pacific Coast for the United States Coast and Geodetic Survey in the 1800's. He wrote in his book, *Coast Pilot of California, Oregon and Washington Territory* (1889), of a northward flowing "Davidson's Inshore Eddy Current" off the Pacific Coast north of latitude 42° N, which carried Californian redwood trees up to the Washington and British Columbia coasts. The term "eddy current" was defined as any current moving contrary to a primary current, in this case the equatorward flowing California Current. The presence of the "inshore eddy current" was also verified by Richter (1887), who noted

that the current was located within 3-10 nautical miles (5.6-18.5 km) from shore with a maximum speed of 0.62 kts (32 cm/s).

The first modern, detailed examinations of the Davidson Inshore Current were conducted by Reid and Schwartzlose (1960) using parachute-drogued buoys just south of Pt. Sur (35° 33.6' N). They recorded maximum northward velocities of 0.4-0.6 kts (20.6-30.9 cm/s) within 50 nautical miles (93 km) of shore. Later, drift bottle experiments by Schwartzlose (1963), Grigg (1974), and Dewees and Strange (1984) showed that the Davidson Inshore Current is usually present north of Pt. Conception from October through March. In these studies the Davidson Inshore Current appeared within 100 km of shore with maximum northward velocities ranging from 13.3 to 23.2 cm/s. Geostrophic velocity studies of the Davidson Inshore Current conducted by Brown (1974) and Chelton (1984) found maximum northward velocities of 14-20 cm/s about 25 km offshore.

Chelton (1984) and Batteen et al. (1989) provide excellent synopses of the dynamical background for the Davidson Inshore Current and California Current system. Stated briefly, the California Current is set in motion by the alongshore, equatorward wind stress due to the northerly winds which dominate the west coast of the United States. The California Undercurrent, according to Chelton (1984), results from the nearshore positive wind stress curl creating coastal trapped waves which propagate poleward. The coastal trapped waves set up a poleward pressure gradient resulting in the northward movement of water associated with the California Undercurrent. As the northerly winds weaken in the winter, the California Undercurrent migrates to the surface forming the Davidson Inshore Current.

As part of an ongoing bimonthly investigation of the California Undercurrent by the Naval Postgraduate School (NPS), Monterey, California, the **R.V. Pt Sur** conducted a hydrographic survey off Pt. Sur, California, during the week of 17-24 January, 1990. Temperature and salinity data was collected via Conductivity Temperature Depth (CTD) soundings, and velocity data was collected via Acoustic Doppler Current Profiler (ADCP) and PEGASUS acoustic dropsonde. The **R.V. Pt. Sur** transited across the continental shelf and slope, along parallel 36° 20' N, out to a point 102 km offshore. It then proceeded southwest along the California Cooperative Oceanic Fisheries Investigations (CalCOFI) survey line 67 to coordinates 35° 46' N, 124° 13' W and thence back to Moss Landing Harbor where the cruise began.

The sampling plan for the January 1990 cruise followed the same plan as a February 1989 cruise. Berryman (1989) analyzed the data from this earlier cruise, providing the first look at the kinematics of the Davidson Inshore Current off Pt. Sur. A comparison of the results of the two cruises will provide a glimpse of the variability of the Davidson Inshore Current in winter.

II. DATA COLLECTION AND PROCESSING

The **R.V. Pt. Sur** departed Moss Landing Harbor on January 17, 1990 with a combined scientific crew from NPS and the Monterey Bay Aquarium Research Institute (MBARI) for the purpose of collecting physical and biological (phytoplankton, nutrients, dissolved oxygen, etc.) data along the Pt. Sur transection. After an initial CTD cast in the Carmel Canyon area, the ship proceeded as planned along the transection beginning with CTD station 1. A total of 22 CTD casts and 13 successful PEGASUS drops were conducted at the locations noted in Figure 1. ADCP data were collected continuously throughout the cruise. After completing the hydrographic survey of the Pt. Sur transection, the **R.V. Pt. Sur** returned to Moss Landing and conducted several CTD casts in the Monterey Canyon area, the data from which are not used in this paper.

The weather conditions during the survey consisted of generally light airs and breezes with cold temperatures. Winds averaged 6 kts (3 m/s) out of the northwest (associated with a high pressure cell off the west coast of North America). Temperatures ranged from a low of 9.58 °C to a high of 12.43 °C with an average of 11.5 °C.

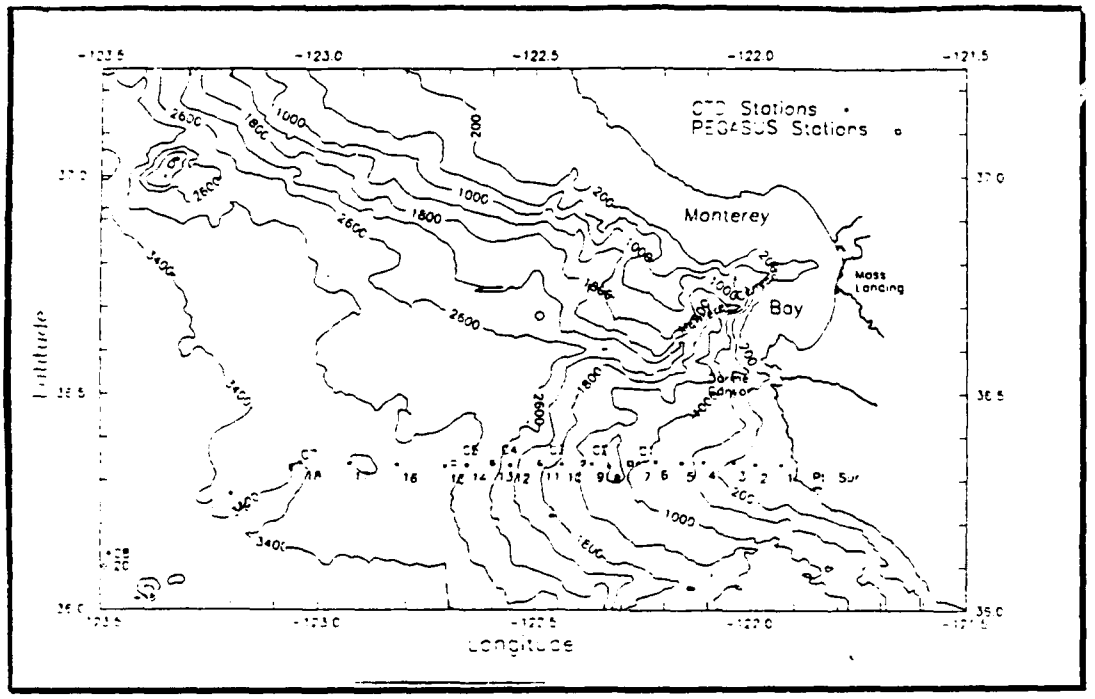


Figure 1. Survey area with CTD and Pegasus stations marked. Isobaths spacing is 200 m. Note that CTD stations 21 and 22 are off chart to the SW.

A. DATA COLLECTION

1. CTD

The CTD casts were made with a Neil Brown Mk III CTD lowered via winch from the **R.V. Pt. Sur**. This model CTD is considered to be accurate to within ±0.005 psu (PSS78 practical salinity unit), ±0.005 °C, and ±6.5 dbar. Salinity, temperature, and pressure resolutions are 0.001 psu, 0.0005 °C, and 0.1 dbar respectively. The CTD unit was lowered directly to the bottom during downcasts and then stopped at selected bottle depths during upcasts in order to collect water samples using rosette-mounted Niskin bottles. The samples were used later in the conductivity calibration process. A breakdown of station

numbers, date/time (GMT) the cast began, latitude, longitude, and bottom depths is provided in Table 1.

2.ADCP

Continuous relative current velocity data were collected onboard the **R.V. Pt. Sur** by means of a RD Instrument DR0150 Acoustic Doppler Current Profiler equipped with a four beam JANUS array operating at a frequency of 150 kHz. Vertical profiles of averaged data were recorded every three minutes. Along with the ADCP acoustic ping data, the ship's position data obtained from LORAN C were also recorded on 5.25" computer disks for later processing.

The conversion of recorded ADCP relative velocity data into absolute velocity data is highly dependent on the precision of the navigational data. Other factors such as ship's speed, maneuvering (which compounds problems of gyro lag), and data collection intervals also contribute to inaccuracies in the resulting absolute velocity data. Kosro (1985) provides a detailed description of the instrument and its inherent inaccuracies. According to Kosro, accuracies of 4-5 cm/s in the athwartship component and 2-4 cm/s in the fore-aft component are to be expected.

TABLE 1. CTD SOUNDINGS ALONG PT. SUR TRANSECTION

Station	Date/Time	Latitude	Longitude	Depth(m)
1	1-17/2357	36-20.12	121-55.38	45
2	1-18/0038	36-20.12	121-59.96	98
3	1-18/0104	36-20.30	122-02.09	131
4	1-18/0149	36-20.33	122-05.93	346
5	1-18/0223	36-20.26	122-08.81	679
6	1-18/0355	36-20.40	122-13.19	947
7	1-18/0456	36-20.24	122-15.52	1004
8	1-18/0827	36-20.00	122-19.41	966
9	1-18/0928	36-20.18	122-22.13	1222
10	1-18/1339	36-20.12	122-25.75	1695
11	1-18/1857	36-20.05	122-28.73	1868
12	1-19/0219	36-20.04	122-32.99	2272
13	1-19/0417	36-20.14	122-35.76	2662
14	1-19/1359	36-20.10	122-38.97	3151
15	1-19/2031	36-20.00	122-42.34	3167
16	1-20/0101	36-20.08	122-48.68	3106
17	1-20/1401	36-20.21	122-55.47	3542
18	1-21/0054	36-20.29	123-02.23	3309
19	1-21/0519	36-15.69	123-11.45	3344
20	1-21/2111	36-07.52	123-29.00	3603
21	1-22/1735	35-57.16	123-50.43	3927
22	1-22/1027	35-45.74	124-12.78	4019

3. PEGASUS

The PEGASUS acoustic dropsonde is an acoustically tracked velocity profiler which falls freely through the water column and returns to the surface after dropping lead weights upon reaching the ocean floor. As it travels through the water column, PEGASUS emits a 10 kHz signal every 16 seconds which solicits a responding signal from two or more bottom-mounted (and surveyed) transponders. The raw round trip travel times of the signals (along with pressure, temperature, and conductivity data) are recorded by PEGASUS for downloading upon retrieval.

PEGASUS drops were to have been made at 9 stations along the transection with two drops per station approximately 10 hours apart. The time interval between drops was to aid in the elimination of biases due to inertial oscillations (the inertial period at this latitude being about 20 hours). Unfortunately, transponder failures at station C6 caused the loss of all data at that station. In addition, similar transponder problems at station C5 caused the total loss of data on one drop and the loss of data beneath 1500 m on the other drop. Table 2 provides the station and drop number, date and time (GMT) the drop began, latitude, longitude, and bottom depth for the PEGASUS soundings used in this paper.

TABLE 2. PEGASUS SOUNDINGS ALONG THE PT. SUR TRANSECTION

Station/Drop	Date/Time	Latitude	Longitude	Depth(m)
C1/197	1-18/0641	36-20.25	122-16.46	1030
C2/198	1-18/1129	36-20.03	122-23.12	1359
C1/199	1-18/1636	36-20.08	122-16.38	1021
C2/200	1-18/2056	36-20.31	122-22.81	1297
C3/201	1-18/2344	36-20.17	122-29.40	1885
C4/202	1-19/0617	36-20.15	122-35.65	2616
C3/203	1-19/1028	36-20.13	122-29.43	1887
C4/204	1-19/1618	36-20.18	122-35.64	2608
C5/207[1]	1-20/0825	36-19.83	122-41.17	3169
C7/210	1-21/0021	36-19.58	123-02.79	3614
C7/211	1-21/0923	36-19.63	123-02.77	3613
C8/212	1-21/1632	36-05.99	123-27.78	3625
C8/213	1-22/0137	36-05.74	123-28.72	3628

B. DATA PROCESSING

1. CTD

The initial processing of the CTD data was conducted using programs written by Paul Jessen, Jim Stockel, and Mike McCann of the NPS Oceanography Department. The raw data were edited for obvious bad points and averaged into 1 m bins. Conductivity measurements were calibrated with collected water

[1]Note no data below 1500 m.

samples. The data were then extracted from the mass-storage file and processed by the CTDTAB data extraction program. CTDTAB was set to extract data at the following intervals: temperature 0.5 °C, salinity 0.1 psu, and density anomaly 0.1 kg/m^3. Only those points with one of the three break values were kept. CTDTAB data listings are included in Appendix A.

The CTD data, along with the ADCP and PEGASUS data, were then gridded and plotted using the SURFER contouring program by Golden Software, Inc (1989). All grids were created using the kriging gridding method with a quadrant search of two points per quadrant. The x and y spacing between grid points (except for Figures 8e and 8f) was 10 km and 50 m respectfully. All grids were then smoothed using the cubic spline option in SURFER.

2. GEOSTROPHIC

Following the processing of the CTD data, the dynamic height data obtained were then used to calculate geostrophic velocities via the GEOVEL program written by Paul Jessen (1988). Although PEGASUS data indicated that water velocities were closest to 0 cm/s at the 1000 m level, the geostrophic velocity transection with the level of no motion (LNM) at 1000 m produced very unrealistic results. The 0 cm/s isotach at 1000 m resulted in sharp bends (up to 90°) in isotachs between 800 and 1200 m. Also, numerous bands of reversing geostrophic velocities were present at the surface and bottom of the transection out to 100 km offshore. Therefore, the deepest common depth between stations was chosen as a level of no motion (LNM), which produced a more realistic picture around 1000 m and limited the geostrophic banding.

The geostrophic velocity bands were present between the coast and CTD station 15 (72 km offshore). Maximum velocities of positive (northward) 47.3 cm/s and negative (southward) 35.7 cm/s were calculated. These high velocity alternating north-south bands were not present on either the PEGASUS (which might not have been able to resolve them) or ADCP (which certainly could resolve small scale banding and detected only one such band 18 km offshore) V velocity transections. In order to eliminate the alternating bands without having to selectively choose which CTD station data to input, a 5 by 5 smoothing matrix was applied to the initial geostrophic velocity transection. The matrix assigned the central point a value of 2 while all other points were equal to 1. The resulting geostrophic velocity transection satisfactorily compared to the results from PEGASUS and ADCP.

3. ADCP

The initial processing of the ADCP data followed procedures outlined by Kosro (1985). The data were edited to remove obviously bad points, correlated to a reference layer based on a "good ping" return of at least 98% coverage, matched to navigational data, vertically filtered using an 8 m halfwidth Hanning window, and averaged over an interval of 0.1° longitude. The procedure produced U (east-west) and V (north-south) absolute velocity data down to 400 m depth. Detailed information concerning ADCP data processing can be found in papers by Reece (1989) and King (1989).

4. PEGASUS

The processing of the PEGASUS data used a modified program initially developed at the University of Rhode Island (Lillibridge and Rossby, 1987). Travel time data were converted to ranges, hand edited to remove obviously bad points, and then vertically filtered using a 30 m Hanning halfwidth filter to remove noise. At this point, the calculated ranges and pressure (p) data from PEGASUS are used to compute location {P(x,y,z)}. Velocity is then obtained by differentiating sucessive x, y positions with respect to time (t). In equation form:

$$v = \frac{dP}{dt}$$

The above procedure produced two profiles of absolute velocity data (downcast and upcast) per drop or four profiles per station (with the exception of station C5, see section II.A.3). Before gridding, the data points in the top 25 m of the profiles were deleted in order to remove the abnormally high velocities (up to 120 cm/s U velocities!) associated with instrument launching and recovery. The duplicate points were then averaged in the gridding process.

III. GEOPHYSICAL TRANSECTIONS

Analyses of the physical parameters associated with the water flowing through the study area will be covered in this chapter. The data are presented as transections across the continental margin from Pt. Sur to the outermost CTD station, some 220 km offshore. The width of the transection is sufficient to cover the area of the Davidson Inshore Current as well as the inshore edge of the California Current. The structure of these geophysical transections will define the kinematics of the currents themselves.

A. TEMPERATURE

As shown in Figure 2, the temperature structure of the transection reveals strong stratification in the upper 100 m (i.e. the water warmer than 10 °C). The influence of the California and Davidson Inshore Currents can be associated with the two areas of downward bending isotherms separated by a ridge in the isotherms 90-130 km offshore. The surface core of the Davidson Inshore Current is located by the sharp depression in the isotherms 20-50 km offshore. Its central temperature is 13.0 °C. Note that isotherms under the Davidson Inshore Current have a wave like structure down to over 800 m. This structure indicates that the influence of the Davidson Inshore Current possibly extends down to that level; however, other processes such as internal wave activity may also be contributing to the structure. On the other hand, the surface flow of the eastern California Current shows up as a broad, gentle sloping area of depressed isotherms extending 120-220 km offshore. This flow has a central temperature of 13.0 °C, and the isotherm disturbances beneath it extend only to ~500 m.

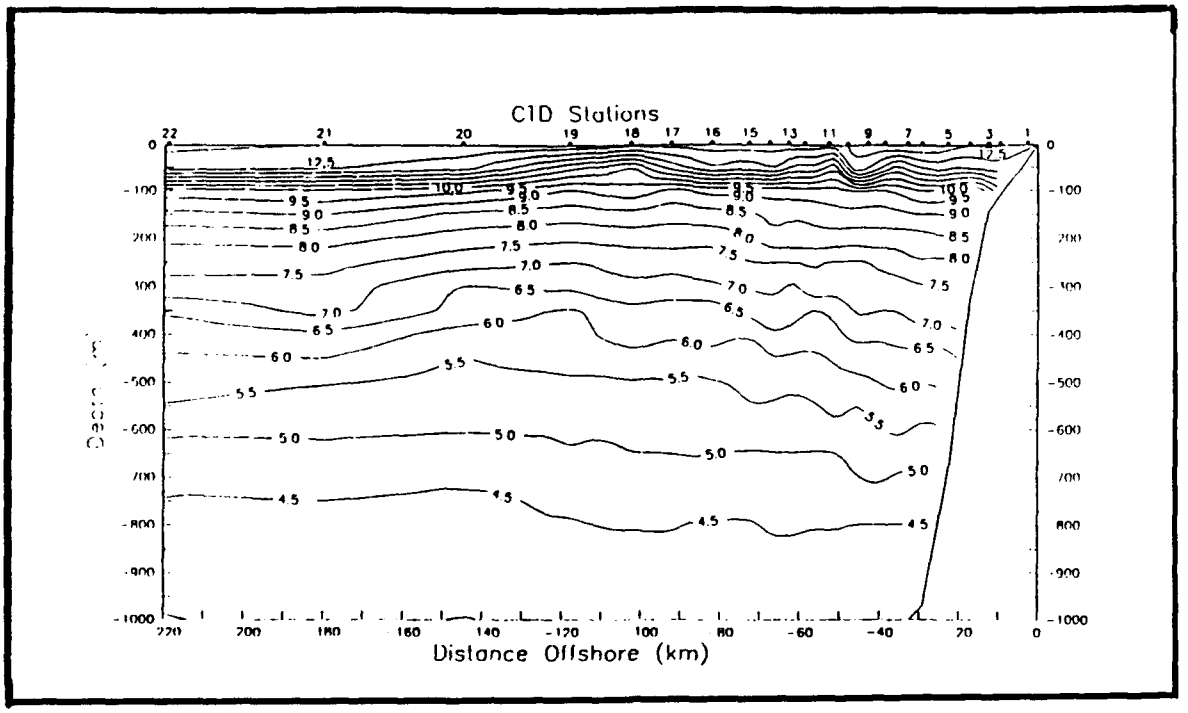


Figure 2. Temperature transection. Isotherm spacing is 0.5 °C. Station locations are shown in Figure 1. Distance offshore is measured from Pt. Sur, Ca.

Wintertime minimum sea surface temperatures (SST's) in this region occur in March with an average minimum of 10.4 °C (Churgin and Halminski, 1974). In January, the conditions are somewhat warmer; the minimum and maximum SST observed on the cruise were 12.7 °C (station 17) and 13.4 °C (station 7) respectively.

Although the California Current supposedly brings cool water from the north while the Davidson Inshore Current brings warm water from the south, the SST of the transection varies only between 12-13 °C. As stated above, the central SST's of the two opposing currents are, in fact, equal. This disparity would suggest that the SST in the vicinity of Pt. Sur, during the winter, is dominated by surface cooling due to air-sea interaction and not by advection of heat by the

California Current and Davidson Inshore Current; however, this senario turns out not to be correct (to be discussed in section V).

B. SALINITY

Unlike the temperature (and the potential density anomaly transection to follow), the salinity transection is not clearly split between the California Current and Davidson Inshore Current regimes at the surface, as seen in Figure 3. Rather, the salinity transection is dominated by surface fresh water offshore.

In the upper 75 m of the transection, a large area of 33.2 psu, or even fresher, water extends from 60 to 220 km offshore. A salinity minima of 32.9 psu water, associated with the California Current, is located 170-205 km offshore and extends to a depth of 60 m.

An exception to the general freshness of the water is a isolated feature of 33.3 psu water at the surface between 85 and 130 km offshore. The 33.3 psu feature creates a salinity inversion between 40 and 70 m at the same location as the ridges noted in the temperature and density anomaly profiles.

The inshore area, on the other hand, is dominated by high salinities at the surface out to 45 km and between 150 and 600 m. The former is a surface layer of 33.4 psu water associated with the Davidson Inshore Current. The later area is a noticeable bending upwards of isohalines evident along the continental margin down to the 34.3 psu isohaline at 600 m depth and offshore to 80 km. This distortion of isohalines at depth may be an indication of advection of high salinity water below the surface.

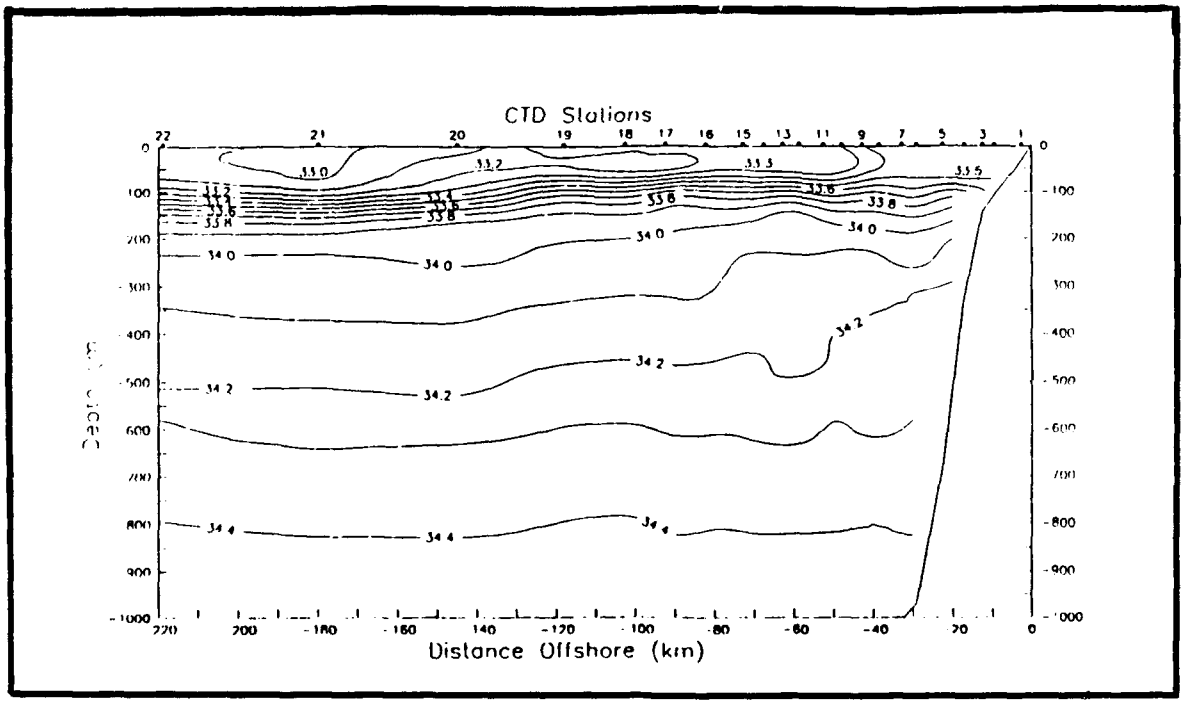


Figure 3. Salinity transection. Isohaline spacing is 0.1 psu. Station locations are shown in Figure 1. Distance offshore is measured from Pt. Sur, Ca.

C. DENSITY ANOMALY (γ_Θ)

The densit: anomaly used in this paper is commonly called the potential density anomaly. It is defined as the density of water (ρ) calculated as a function of potential temperature (θ) referenced to 0 dbar, *in situ* pressure (p), and salinity (s), minus 1000 kg/m^3. In equation form:

$$\gamma_\theta = \rho(\theta,s,p) - 1000 \text{ kg/m}^3$$

The observed potential density anomaly transection is very similar in structure to the temperature transection. Strong stratification is evident in the upper 150 m as shown by the tight packing of the isopycnals in Figure 4. The positions of the California Current and Davidson Inshore Current are associated with the large, shallow-sloping areas of depressed isopycnals.

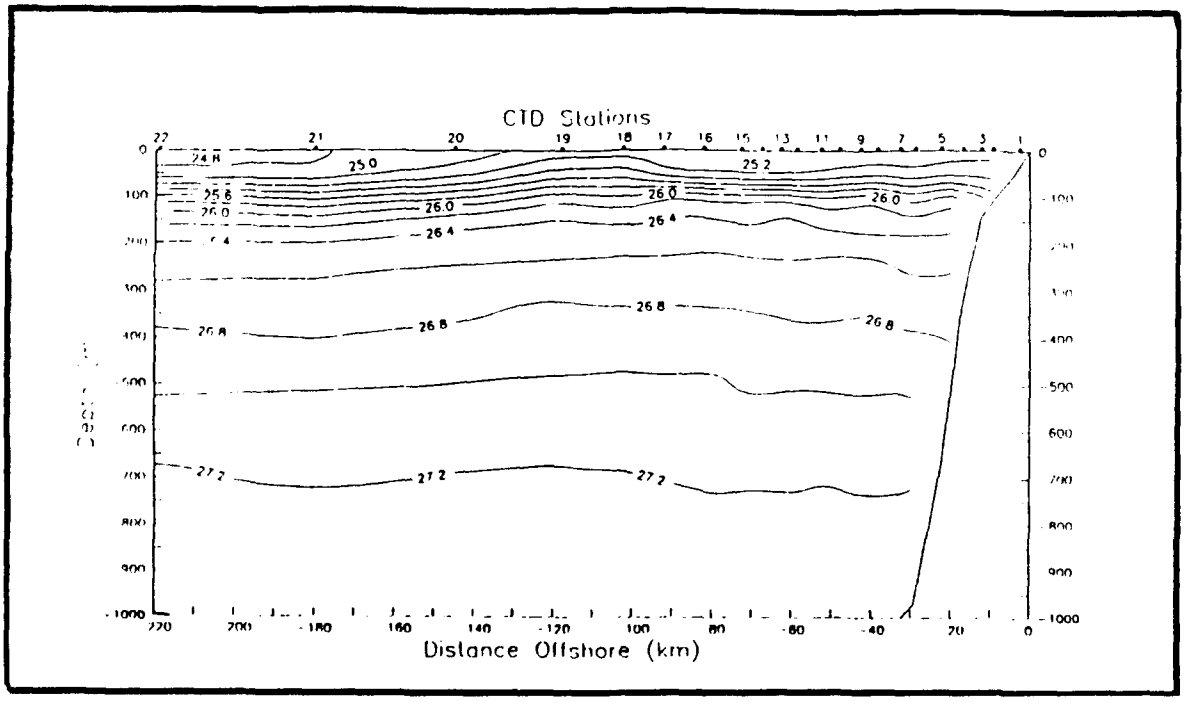


Figure 4. Density anomaly transection. Isopycnal spacing is every 0.2 kg/m^3. Station locations are shown in Figure 1. Distance offshore is measured from Pt. Sur, Ca.

The depressed isopycnal areas are separated by a ridge in the isopycnals 90-130 km offshore. The ridge corresponds to an upward bulge evident in the isotherms of the temperature transection (Figure 2, 90-120 km offshore). Note that the isopycnals shoreward of the ridge slope down towards the coast (indicating poleward flow), and the isopycnals offshore of the ridge slope up towards the coast (indicating equatorward flow). Also, there is some indication of a negative slope in the isopycnals between 180 and 220 km offshore.

Later, in the sections covering the ADCP and PEGASUS velocity transections, the ridge area will be shown to correspond to the transition region, or "dynamic trough", between the southwestward flowing California Current and the northwestward flowing Davidson Inshore Current. The dynamic trough

corresponds to the presence of a permanent cyclonic eddy off the central California coast noted by Wyllie (1966). Also, the negative slope area will reveal an anomalous area of poleward flow between 180 and 220 km offshore in the geostrophic and ADCP velocity transections.

D. WATER MASS

Tibby (1941) and Kindyushev (1970) wrote that the water off the central California coast was formed by the mixing of waters originating from the Subarctic Northern Pacific and Equatorial Pacific water masses. The original surface characteristics for the Subarctic Northern Pacific water mass were defined to be 9 °C and 32.8 psu, while the Equatorial Pacific waters originated with a temperature of 20 °C and a salinity of 34.75 psu. Kindyushev (1970) stated that the mixing of these two water masses formed a Surface Subtropical Eastern Pacific water mass with characteristics ranging from 11 °C to 15 °C and from 32.8 psu to 33.5 psu.

T-S diagram and spiciness are two methods of resolving the character of the water masses which make up the transection. The T-S diagram, which consists of a plot of temperature (in °C) and salinity (in psu), will be discussed first. Spiciness, a tracer of water characteristics conserved by isentropic motions, will then be used as an alternative method

1. T-S Diagram

Two distinct water mass regimes can be distinguished in the T-S diagram (Figure 5). The first regime is a region of distinct, separate water characteristics which appears above 8 °C and less than 34 psu. This area of high temperature and low salinity corresponds to the upper 200 m of the transection, which is where the California Current and the Davidson Inshore Current are present.

The outermost CTD stations (19, 20, 21, 22) are located furthest to the left, indicating the presence of low-salinity California Current water. All other stations appear to be dominated by the more saline waters associated with the Davidson Inshore Current (with values greater than or equal to 33.4 psu). The temperature and salinity values observed in this regime correspond to the characteristics attributed to the Surface Subtropical Eastern Pacific water mass by Kindyushev (1970).

The second water mass regime is the well-mixed area of uniform temperature-salinity readings below 8 °C and greater than 34 psu. All stations exhibit uniform temperature and salinity measurements which decrease or increase, respectively, in an approximately linear manner to the bottom. The temperature-salinity curve in this regime corresponds to the deep Equatorial Pacific water off Pt. Sur discussed by Tibby (1941).

The dividing point between the two regimes (~8 °C, 34 psu, 26.25 kg/m^3) corresponds to a depth between 150 and 200 m as seen in Figures 2-4. The 150-200 m layer, therefore, must be a region of active mixing and entrainment.

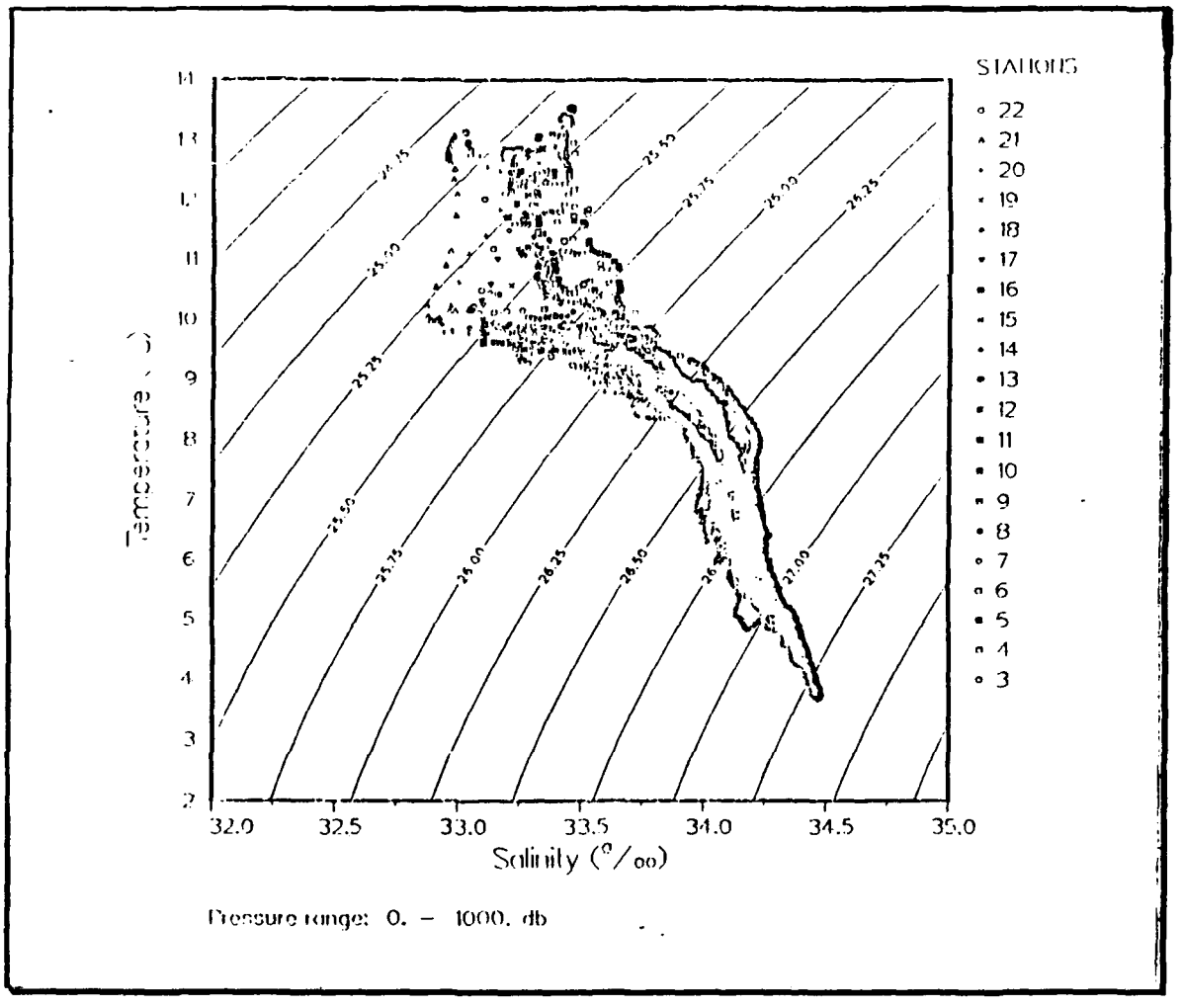


Figure 5. Temperature and salinity characteristics. Station locations are shown in Figure 1.

2. Spiciness (π)

As defined by Flament (1986), spiciness is a water state variable which is sensitive to isopycnal thermohaline variations. Spiciness simultaneously serves as a tracer of water mass characteristics and as an indicator of diffusive stability. Monk (1981) defined the value of spiciness to be largest for hot and salty water.

The spiciness transection shown in Figure 6 provides a complicated picture and is divided into three parts. The section within 80 km of shore is dominated by positive spiciness values above 400 m which indicates water originating in warm, saline regions. The positive spiciness values reach a maximum of 0.5 at 20-40 km offshore, 0-75 m depth. This position corresponds well with the location for the core of the Davidson Inshore Current (see section IV).

The area of positive spiciness reaches to a depth of 450 m, while reaching a horizontal maximum out to 120 km offshore at 200 m. The presence of this large area of positive spiciness water beneath the Davidson Inshore Current indicates that subsurface advection of warm and saline water is ocurring around 200-300 m, probably due to the presence of the California Undercurrent. If this hypothesis is correct, it would indicate that the California Undercurrent remains a distinct entity while the Davidson Inshore Current is present at the surface. The close proximity of the two currents would also indicate that the appearance of the Davidson Inshore Current is indeed linked to the shoreward migration of the California Undercurrent into shallower waters (Hickey, 1979).

The second section is defined by a submerged feature of negative spiciness 90-140 km offshore, 40-125 m depth, which has a minima of -0.3. This position coincides with the dynamic trough associated with the upward bending of isotherms/isopycnals pointed out in the temperature transection (Figure 2) and γ_θ transection (Figure 4).

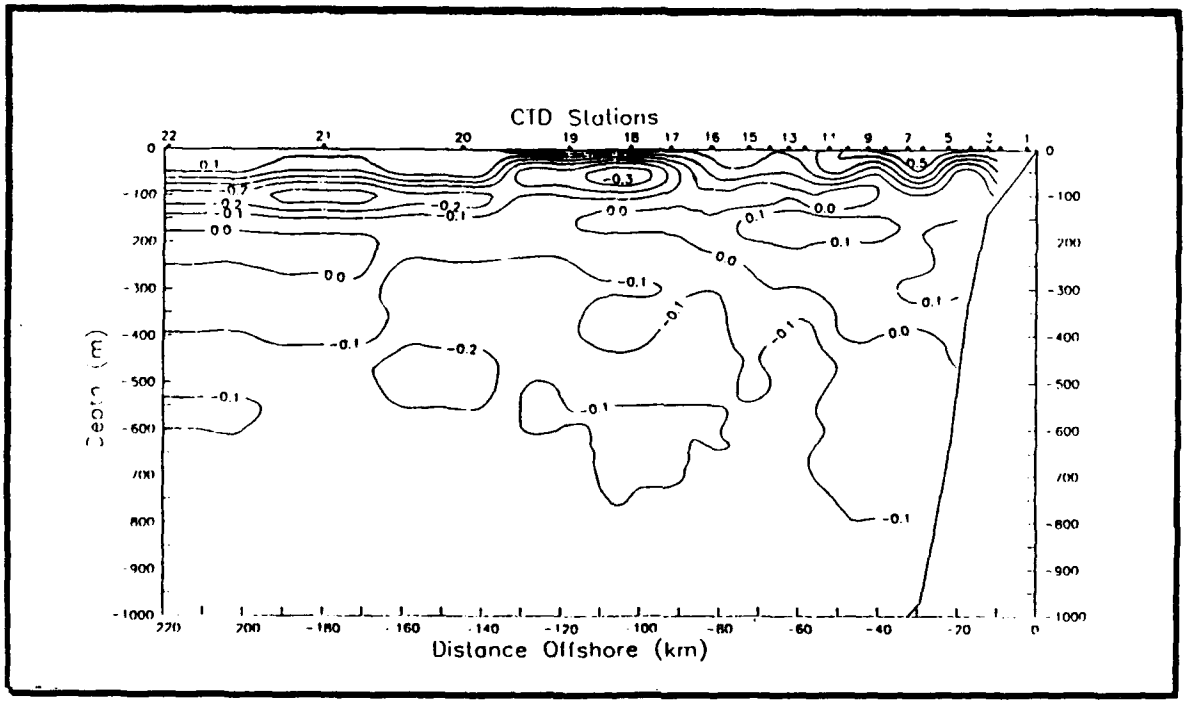


Figure 6. Spiciness transection. Contour spacing is 0.1. Station locations are shown in Figure 1. Distance offshore is measured from Pt. Sur, Ca.

Lastly, the section from 140-220 km offshore is where the fresh, cool California Current should dominate. Indeed, there is an area of negative spiciness values present, with a minima of -0.3 located 170-195 km offshore at a depth of 100 m. The upper 50 m of this section has weak positive spiciness values which may be influenced by air-sea interaction.

E. SUMMARY

The geophysical transections support the hypothesis that the waters across the continental margin off Pt. Sur are dominated by water advected by the California Current (equatorward) and the Davidson Inshore Current (poleward). The Davidson Inshore Current appears to lie between 0 and 90 km offshore (with its core at 30-50 km offshore). Indications of warm and saline water down to 800 m suggest the presence of the California Undercurrent, at 200-300 m depth, directly beneath the Davidson Inshore Current. The California Current is located beyond 130 km offshore with a "dynamic trough" transition region centered at 120 km offshore dividing the two current regimes. The core temperature values for the Davidson Inshore Current and California Current are equal (13.0 °C), while the core salinity values are 33.4 psu and 32.9 psu respectfully. Furthermore, the density anomaly transection indicates that an additional poleward flow may be present beyond 180 km from shore.

IV. VELOCITY TRANSECTIONS

The velocity transections for the Pt. Sur transection were derived three ways. The first method was the indirect calculation of the geostrophic V (north-south) velocity transection using dynamic height measurements from the CTD. The other two methods involved direct measurements of the U (east-west) and V (north-south) velocities via ADCP and PEGASUS. The results of the direct measurements were then compared to the geostrophic calculations in order to determine the mean magnitude and direction of any currents present. All three methods reveal that the transection is basically divided into the two expected current regimes: the northward flowing Davidson Inshore Current inshore and the southward flowing California Current offshore. The geostrophic and PEGASUS V velocity transections also reveal an additional poleward flow beyond 180 km offshore.

Given that the Central California coastline between Morro Bay and Pt. Sur is orientated in the direction of 322° T, U (east-west) velocities are expected due to the flow of the two main currents parallel to the coast. In fact, the Davidson Inshore Current was calculated to have a mean direction of 328° T with an average speed of 8.7 cm/s based on ADCP and PEGASUS data (the eastern edge of the California Current was calculated to have a mean speed of 6.26 cm/s towards 129° T). Therefore, in order to determine convergences and alongshore transports, the axes of the ADCP and PEGASUS U/V velocity transections were rotated counter-clockwise 30° so that the V transection was parallel (representing alongshore velocities) to the coast and the U transection was perpendicular (representing cross-shore velocities).

Alongshore transports and average velocities were then calculated using the Cut-and-Fill option of SURFER (1989) which calculated positive/negative volumes (km·m·cm/s) and areas (km·m) of a 3-D surface based upon the rotated ADCP and PEGASUS velocity transections. The volume calculations were then multiplied by 10 m^2/km·cm to produce volume transports (m^3/s), while dividing volume by area provided average velocities (cm/s). Due the fact that Surfer does not distinguish between separate areas of the same sign (positive/negative), the transports and average velocities calculated are not exact, and errors of at least 10% on such calculations should be expected. With this is mind, a total alongshore transport of $8.4 \cdot 10^6$ m^3/s and an average alongshore velocity of 8.2 cm/s for the Davidson Inshore Current were obtained by combining the transport calculated from the PEGASUS data (which extended only from 30 to 142 km offshore) with the transport resulting from the ADCP data within 30 km of shore.

A. GEOSTROPHIC

Following the smoothing techniques discussed in section II.A, the geostrophic velocity transection in Figure 7 shows not two but three distinct currents. The Davidson Inshore Current is the area of strong positive (northward) flow extending from 30 to 110 km offshore, with a maximum core velocity of 38 cm/s at 50-60 km offshore and an average velocity of 3.5 cm/s. The area of positive velocity associated with the Davidson Inshore Current extends down to 1000 m except for two weak areas of negative (southward) velocity. The first of these southward velocity areas is located 60-80 km offshore and extends from 500 m down to the continental slope. The second incidence of southward

velocity water within 110 km of shore is an isolated area hugging the upper continental slope 30-40 km offshore between 200-400 m depth.

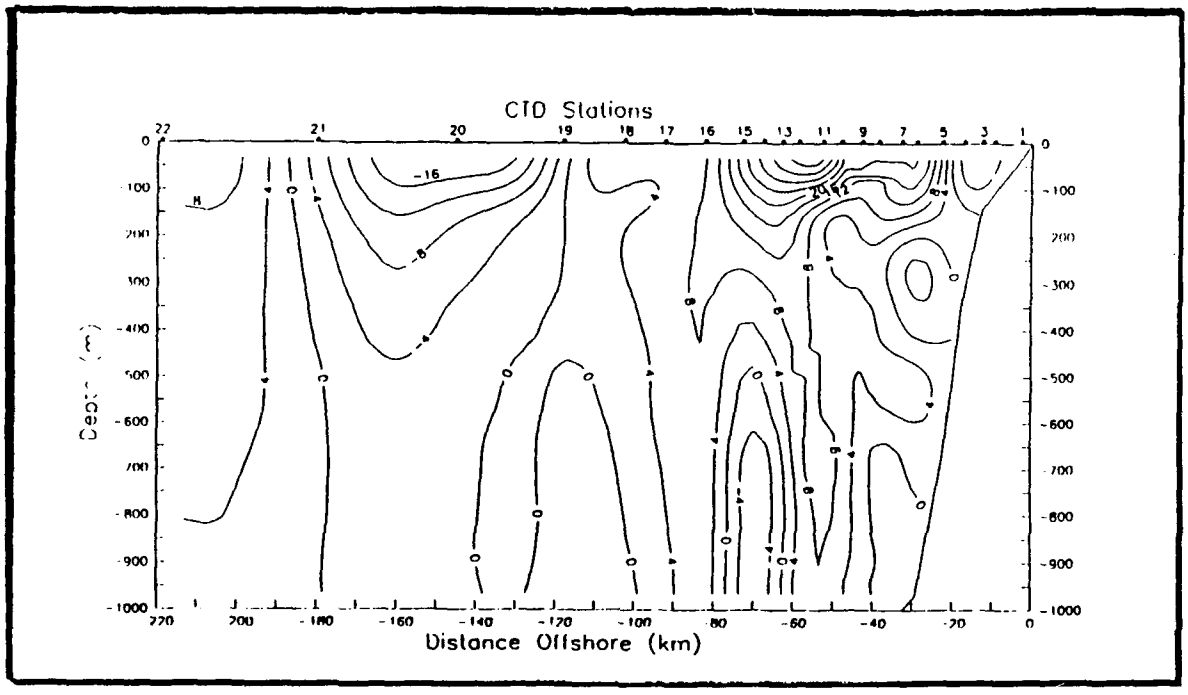


Figure 7. Geostrophic velocity transection. Isotach spacing is 4 cm/s. Station locations are shown in Figure 1. Distance offshore is measured from Pt. Sur, Ca.

Between 120-180 km offshore, the transection is dominated by the slow, broad southward flow associated with the California Current. Due to the transection turning southwestward (in the direction of 240° T) at CTD station 18 (110 km offshore), the geostrophic velocities in this area no longer represent strictly north-south velocities, but velocities orientated along an axis from 330° T to 150° T. The resulting maximum core velocity of the flow is -19 cm/s, and it is spread out over an area extending from 135 to 165 km offshore and to a depth of 100 m. The average velocity for the equatorward flow was 3.4 cm/s.

Climatology indicates that the California Current extends about 1000 km offshore (Hickey, 1979). The current gradually diminishes in magnitude with depth and mean velocities beneath 1000 m are less than 4 cm/s. As stated above, the equatorward flow seen in Figure 7 is located between 120 and 180 km offshore. Therefore, the equatorward flow seen in this data set represents only the eastern edge of the California Current, which is situated between two poleward flows.

Beyond 180 km offshore, there is an indication of a weak, anomalous area of positive (northward) velocity with a maximum of 10 cm/s. Similar areas of anomalous offshore poleward flow found in the geostrophic velocity studies of Brown (1974) and Chelton (1984). As will be seen in the ADCP V velocity transection, this flow turns out to be a definite and not-so-weak area of northward velocity.

B. ADCP

The ADCP provides a highly resolved upper ocean view of the velocities across the Pt. Sur transection. The ADCP velocity transections provide continuous coverage of absolute velocities along the transection out to 220 km offshore; however, ADCP measurements were reliable only to ~400 m.

1. U Velocity Transection

The ADCP U (east-west) velocity transection in Figure 8 reveals an interesting structure of two opposing east-west flows with a transition region, representing the dynamic trough, 120 km offshore. Within 120 km of shore, negative (westward) U velocities are present, while positive (eastward) velocities dominate outside of the transition region.

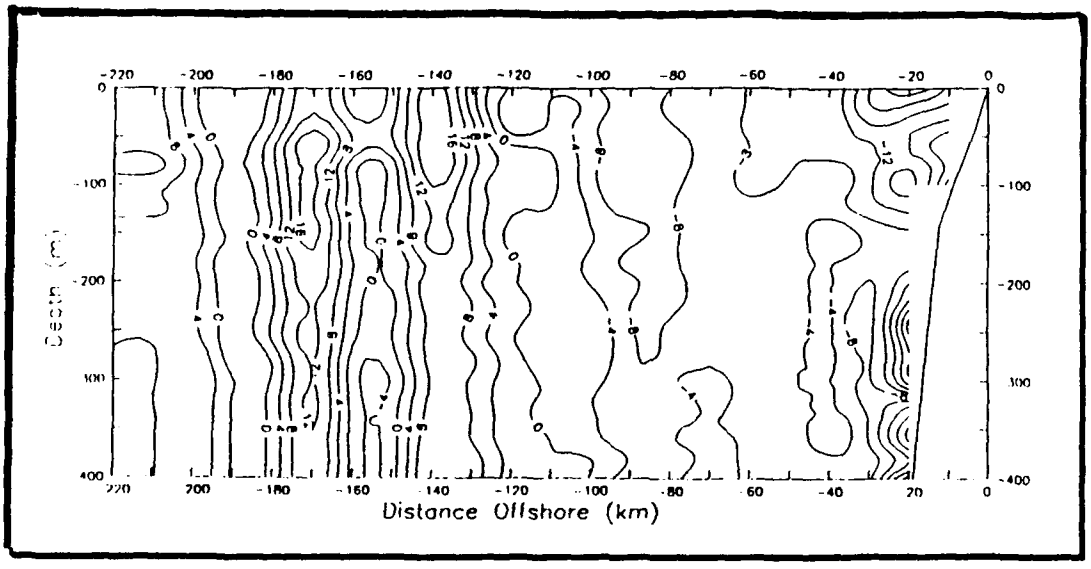


Figure 8. ADCP U (east-west) velocity transection. Isotach spacing is 4 cm/s. Distance offshore is measured from Pt. Sur, Ca.

The area of negative (westward) U velocity within 120 km of shore has a maxima of -26 cm/s at the shelf break, ~20 km offshore. This position is inshore of the probable location of the Davidson Inshore Current (30-50 km offshore) noted in the temperature, density anomaly, spiciness, and geostrophic velocity transections.

At 120 km offshore, the U velocity transection becomes dominated by the southeastward motion of the California Current. With the exception of two very weak (< -4 cm/s) negative velocity areas centered at 155 km offshore (300 m depth) and 190 km offshore, the entire region contains positive (eastward) velocities with three maxima areas. The primary maximas consists of two 16 cm/s areas (with maximum velocities of -19 cm/s) centered at 140 and 170 km offshore with the first previously mentioned weak negative velocity area in between. A secondary maxima of 13 cm/s is located at 220 km offshore beyond the second negative velocity area.

Upon rotation (in Figure 9) with the U velocities orientated cross-shore, the inshore negative velocity area now has maximum value of -18 cm/s which represents an strong offshore flow. The transection between 40 and 135 km offshore has weak offshore velocities (less than -4 cm/s) thereby showing no significant convergences or divergences (note that the dynamic trough is located in this region).

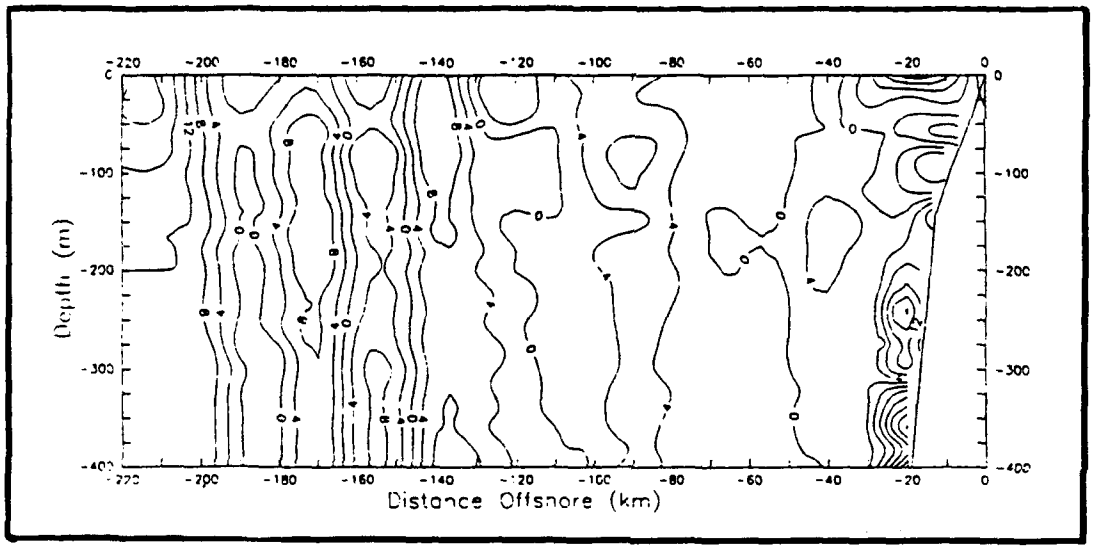


Figure 9. ADCP U (cross-shore) velocity transection. Isotach spacing is 4 cm/s. Distance offshore is measured from Pt. Sur, Ca.

A very different picture exists beyond 135 km offshore with significant positive velocities still present. The positive (onshore) velocity area is still split by the two areas of weak negative (offshore) velocity. The area positive (onshore) velocity area, 135-185 km offshore, has decreased in magnitude with the two maximas of 16 cm/s decreasing to 12 cm/s. Meanwhile, the positive (onshore) velocity area beyond 185 km offshore has increased in magnitude with a 21 cm/s onshore maxima. The structure indicates flow towards shore associated with the poleward flow located 185-220 km offshore.

2. V Velocity Transection

The V (north-south) velocity transection in Figure 10 is similar to the overall structure of the geostrophic velocity transection in Figure 7. Within 120 km of shore, positive (northward) velocities associated with the Davidson Inshore Current are present, with a maxima of 23 cm/s located 20-40 km offshore and extending to 100 m. The California Current is the area of negative (southward) velocities located between 120 and 185 km offshore with a maxima of 17 cm/s in the vicinity of 160 km offshore.

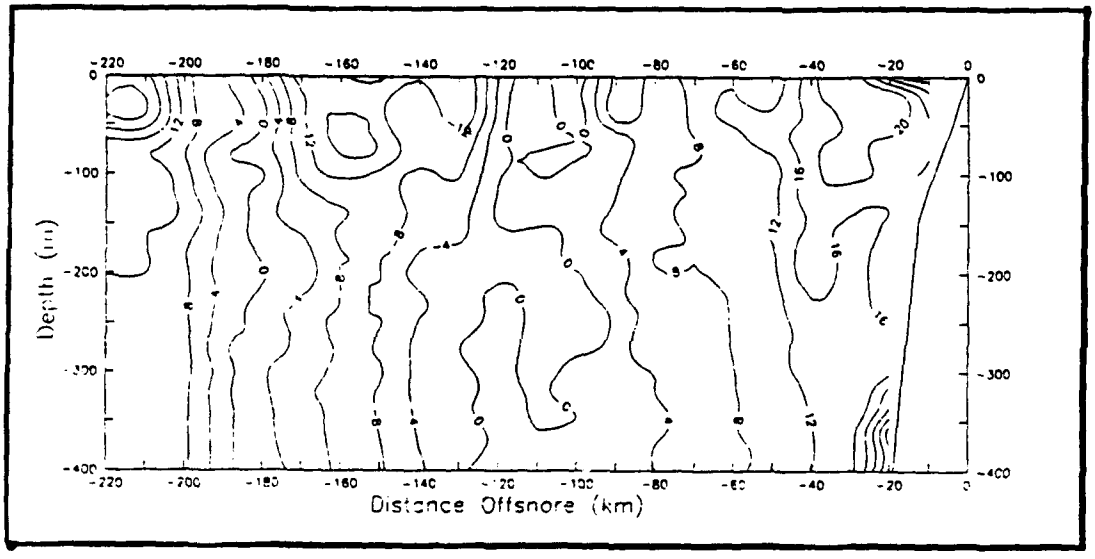


Figure 10. ADCP V (north-south) velocity transection. Isotach spacing is 4 cm/s. Distance offshore is measured from Pt. Sur, Ca.

Interestingly, another area of positive velocity is found beyond 180 km from shore. The area has a local maxima of 25 cm/s, which is even greater than the Davidson Inshore Current! Since the U component (both east-west and cross-shore) is positive in this area, a northeastward flow was observed here. The positive velocities in this area correspond to a similar feature on the western edge of the geostrophic velocity transection (Figure 7). Also, similar poleward flows were reported in the geostrophic velocity studies of Brown (1974) and Chelton (1984).

After rotation (in Figure 11), the positive velocity maxima at 30 km offshore, associated with the Davidson Inshore Current, has increased to 30 cm/s (northwestward). Significantly, a submerged positive (northwestward) velocity maxima of 31 cm/s has appeared along the continental slope at 100 m depth. The location and strength of the submerged positive maxima corresponds to the California Undercurrent. The proximity of the two positive (northwestward) velocity maximas further suggests that the Davidson Inshore Current is linked to but distinct from the California Undercurrent. The poleward alongshore flow was calculated to have an average velocity of 7.4 cm/s with an alongshore transport of 5.2 Sv (Sv = 10^6 m^3/s).

Of the other two velocity regimes, the equatorward flow associated with the California Current did not change significantly (recall that the transection is orientated perpendicular to the coast in this area) with an average velocity of 6.2 cm/s and an alongshore transport of 2.2 Sv. On the other hand, the offshore poleward flow decreased in magnitude from a maxima of 25 cm/s to 17 cm/s, which indicates that the flow is more orientated north-south than alongshore.

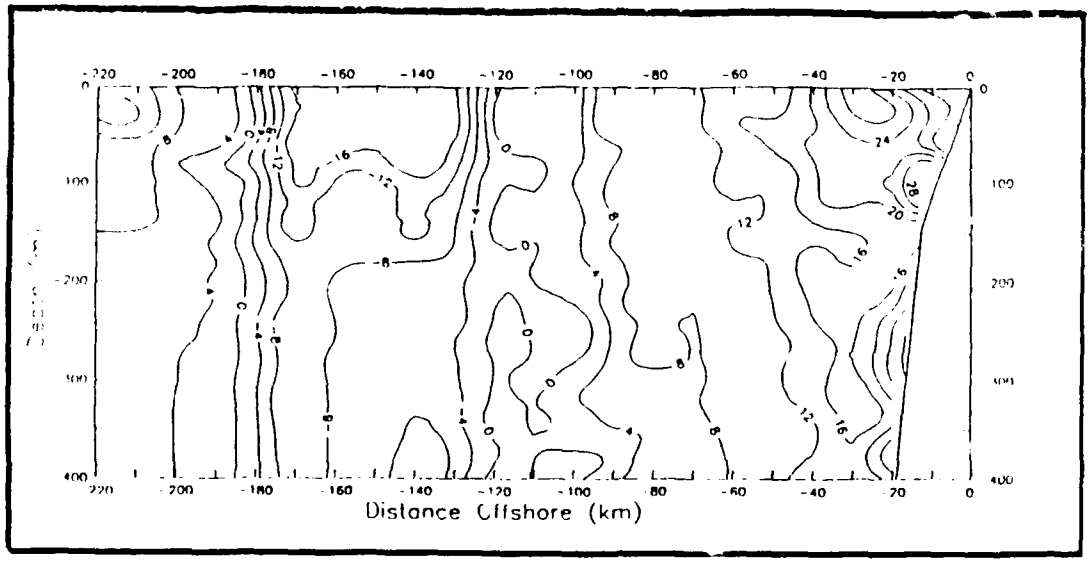


Figure 11. ADCP V (alongshore) transection. Isotach spacing is 4 cm/s. Distance offshore is measured from Pt. Sur, Ca.

3. Shelf Break / Upper Continental Slope Feature

A region of strong velocity gradients was observed on both the ADCP U and V velocity transections over the shelf break and upper slope area, 20-30 km offshore, 200-400 m depth. In order to observe this area better, the north-south ADCP velocity data (recall that the isobaths are orientated north-south here, see Figure 1) were regridded with a zonal spacing of 1 km and a depth spacing of 20 m.

In the close up of the U (east-west) velocity transection (Figure 12a), the feature has a split structure at ~300 m depth. A rapid change from negative to positive velocity (peaking at 14 cm/s) exists between 150 and 300 m, 21-23 km offshore. Meanwhile, a strong enhancement of negative velocity (peaking at -30 cm/s) is located between 300 and 400 m, 18-21 km offshore. Also, another very strong (maxima of -38 cm/s) negative velocity area exists between 200 and 300 m, 23-28 km offshore.

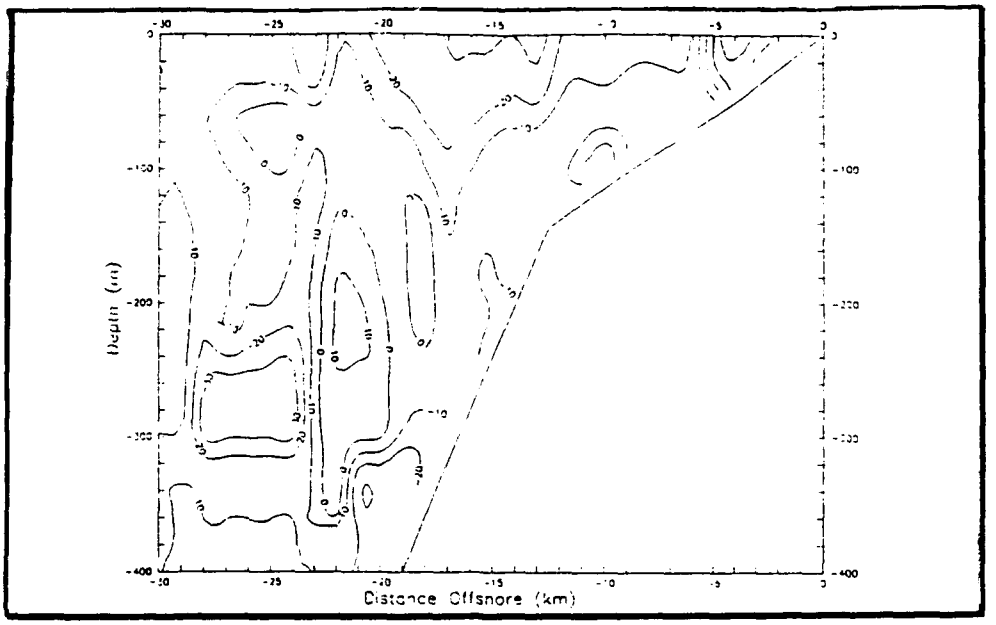


Figure 12a. Close up of the ADCP U (east-west) velocity transection. Isotach spacing is 10 cm/s. Distance offshore is measured from Pt. Sur, Ca.

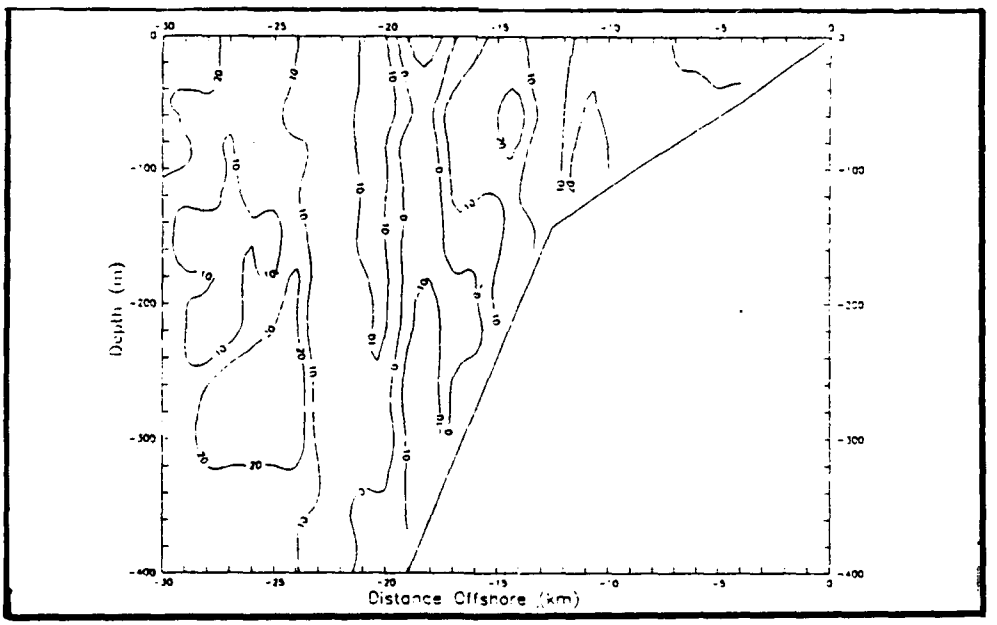


Figure 12b. Close up of the ADCP V (north-south) velocity transection. Isotach spacing is 10 cm/s. Distance offshore is measured from Pt. Sur, Ca.

The feature appears in a close up of the V (north-south) velocity transection (Figure 12b) only as a rapid change from positive to negative velocities (peaking at -18 cm/s) located between 300 and 400 m. As such, the feature corresponds to a similar -4 cm/s feature (maximum velocity -7 cm/s) in the geostrophic velocity transection (Figure 7, 30 km offshore, 300 m depth). Also, the negative velocity feature extends to the surface with a surface maxima of -13 cm/s. The presence of this banding structure in the ADCP data correlates to a negative (southward) feature in the geostrophic transection (Figure 7), which is located at 20 km offshore with a maximum velocity of -7 cm/s. Also, note that the California Undercurrent core (with a maxima of 29 cm/s) has shifted from ~100 m down to ~250 m due to the much tighter gridding method employed.

C. PEGASUS

The PEGASUS dropsonde was the only instrument which measured absolute U and V velocities over the entire water column. Unfortunately, due to the problems discussed in section II.C, the PEGASUS data for the transection was limited to distances from 33 to 140 km offshore, and station spacing exceeds 30 km past station C5. The PEGASUS data still provide confirmation of the velocity features previously seen in the geostrophic and ADCP velocity transections.

1. U Velocity Transection

The PEGASUS U (east-west) velocity transection in Figure 13 displays the same overall structure seen in the ADCP U (east-west) velocity transection. Westward and eastward motions dominate on either side of a transition point at ~120 km offshore (the location of the dynamic trough). From 33 to 120 km

offshore, the water column is dominated by weak negative (westward) velocities averaging -4 cm/s, with an offshore maximum of -13 cm/s at 40 km offshore. Past 120 km from shore, positive (eastward) U velocities are present. A maxima of 15 cm/s occurs at 130-135 km offshore at a depth of 50 m. This velocity corresponds well with the positive U velocity maxima observed by ADCP.

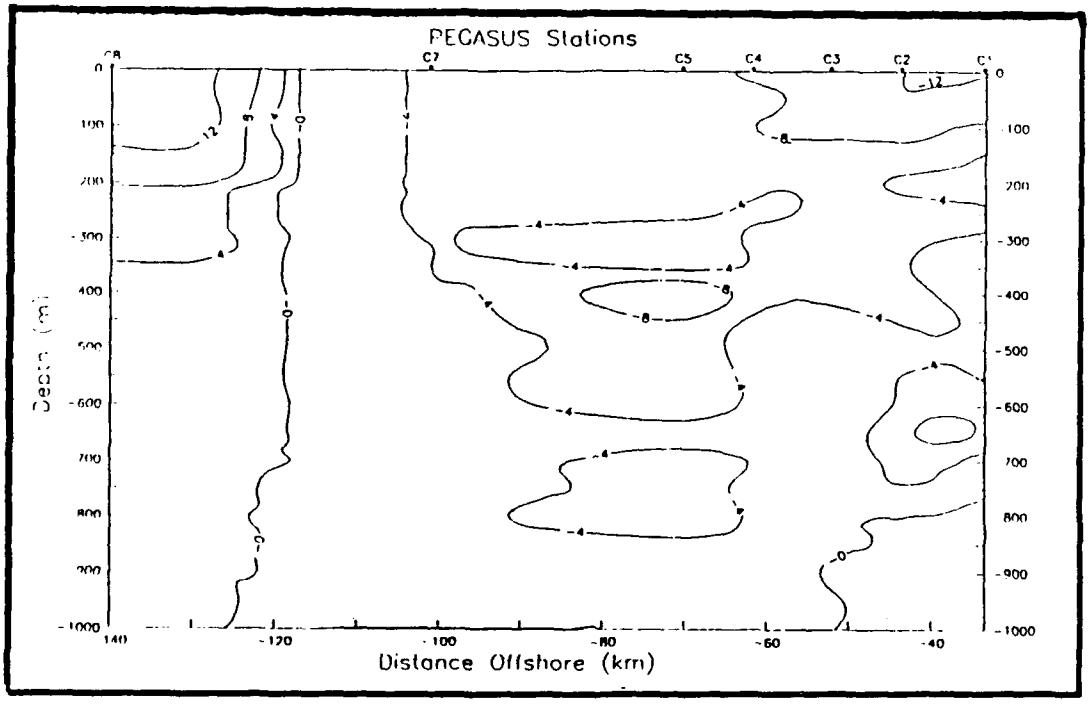


Figure 13. PEGASUS U (east-west) velocity transection. Isotachs spacing is 4 cm/s. Station locations are shown in Figure 1. Distance offshore is measured from Pt. Sur, Ca.

After rotation, the U (cross-shore) transection reveals very weak motions (most between -4 and 4 cm/s). These weak motions indicate that no significant convergences or divergences exist between 33 and 140 km offshore, which correlates with the ADCP U (cross-shore) velocity transection within that range.

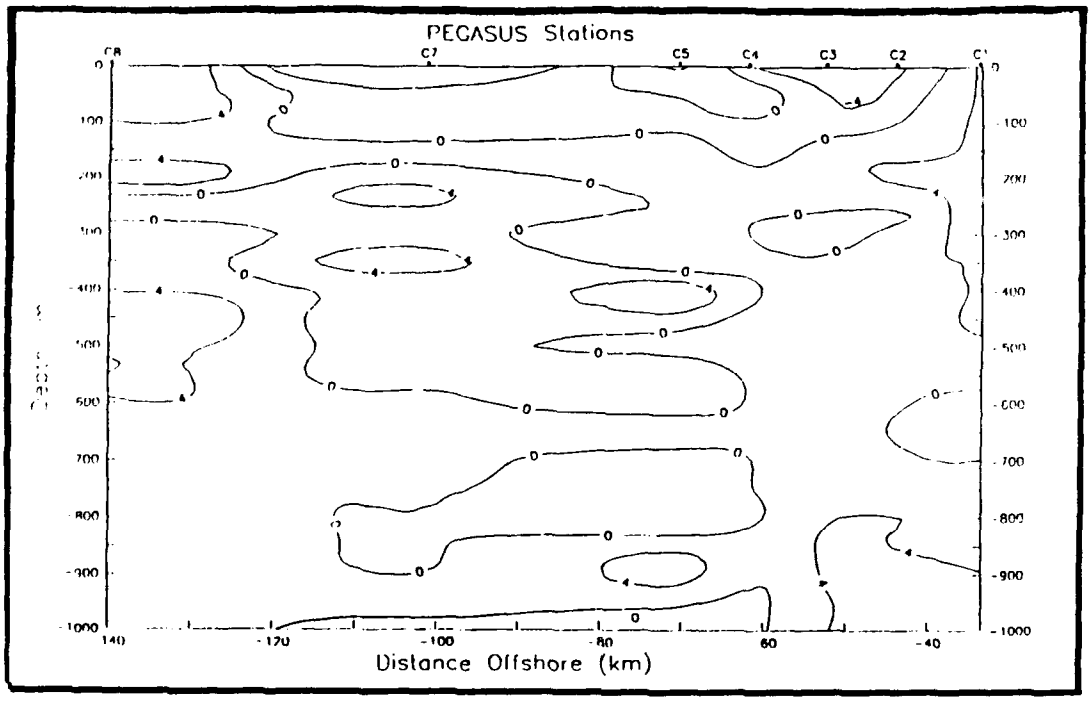


Figure 14. PEGASUS U (cross-shore) velocity transection. Isotach spacing is 4 cm/s. Station locations are shown in Figure 1. Distance offshore is measured from Pt. Sur, Ca.

2. V Velocity Transection

The structure of the PEGASUS V (north-south) velocity transection in Figure 15 is not as clear-cut as the geostrophic and ADCP transections, primarily because the PEGASUS stations covered the area between the cores of the California Current and Davidson Inshore Current. However, the transection is roughly divided between positive (northward) velocities inshore and negative (southward) velocities outside the 120 km offshore transition point. The Davidson Inshore Current core does show up at the eastern edge of the PEGASUS transection in a small area of 26 cm/s velocity water at 50 m, and the eastern California Current core is evident between 125 and 140 km offshore, with a core velocity of -15 cm/s. The locations and magnitudes of the cores

roughly match those seen previously in the geostrophic and ADCP V velocity transections. The only anomalous feature of note is a surface feature between 45 and 65 km offshore with less than 12 cm/s velocities, and a minima of 4 cm/s, in an area dominated by velocities greater than 12 cm/s

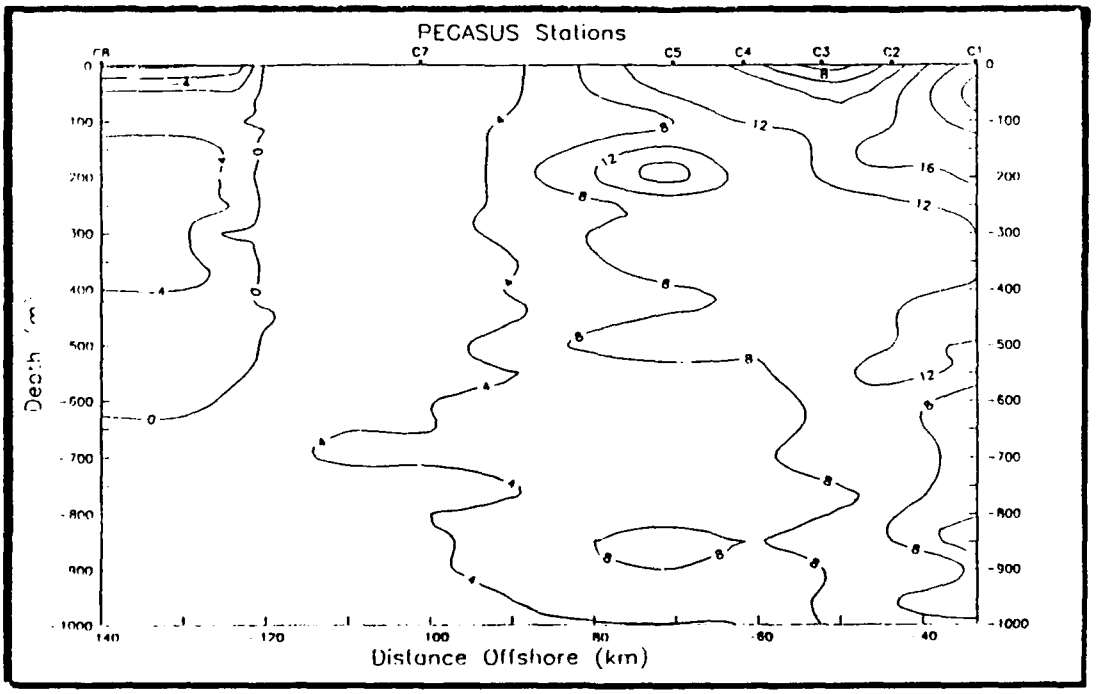


Figure 15. PEGASUS V (north-south) velocity transection. Isotach spacing is 4 cm/s. Station locations are shown in Figure 1. Distance offshore is measured from Pt. Sur, Ca.

The alongshore PEGASUS velocity transection displays essentially the same structure as the north-south velocity transection, but the magnitudes of the flows have increased. The poleward Davidson Inshore Current maxima has increased form 29 cm/s to 34 cm/s, with an average velocity of 7.4 cm/s and an alongshore transport of 7.0 Sv. Although the ADCP and PEGASUS instruments covered different ranges, the average velocities and alongshore transports for the two alongshore velocity transections compare favorably. The small section of

the equatorward California Current flow covered by PEGASUS increased in magnitude from a maxima of -12 cm/s to -15 cm/s, with an average velocity of 6.2 cm/s and an alongshore transport of 1.6 Sv.

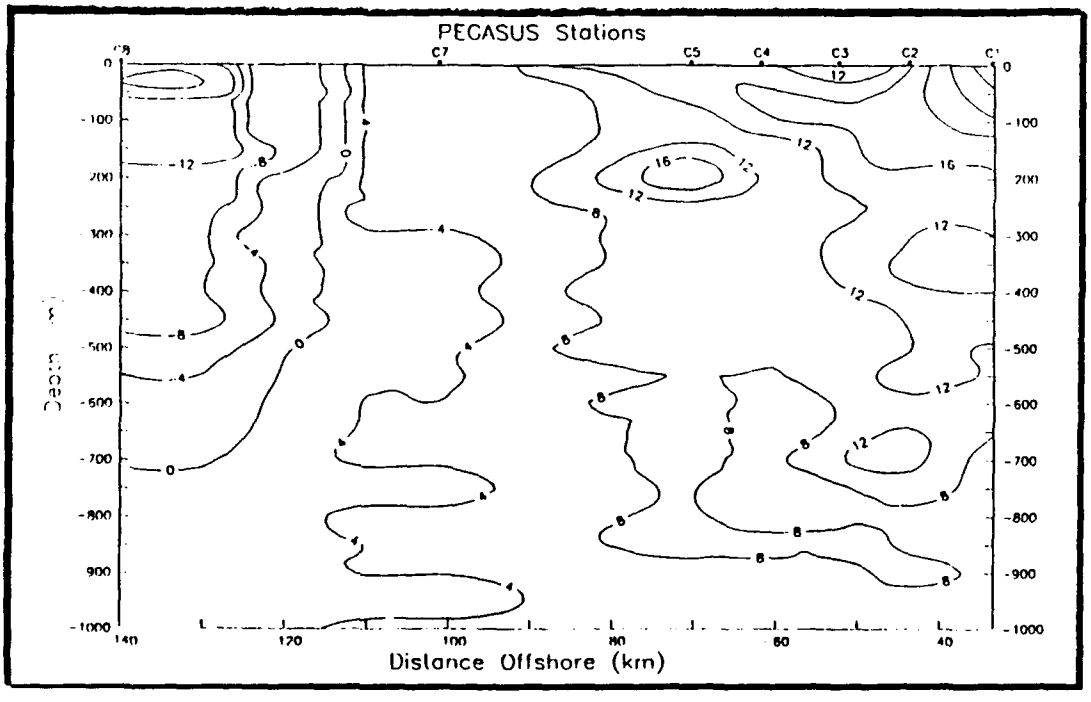


Figure 16. PEGASUS V (alongshore) velocity transection. Isotach spacing is 4 cm/s. Station locations are shown in Figure 1. Distance offshore is measured from Pt. Sur, Ca.

D. SUMMARY

The Pt. Sur Transection, during January 1990, was divided into three velocity regimes: the poleward flowing Davidson Inshore Current (with the California Undercurrent possibly beneath it), the equatorward flowing eastern edge of the California Current, and an anomalous offshore northeastward flow. The Davidson Inshore Current flowed parallel to the coast, in the direction of 328° T, between 20 and 120 km offshore. The maximum flow was centered 20-40 km offshore with a velocity of ranging between 30-34 cm/s. The alongshore

transport for the Davidson Inshore Current was calculated to be 8.36 Sv utilizing combined ADCP and PEGASUS data. The eastern edge of the California Current was located 120-180 km offshore, between the Davidson Inshore Current and the offshore northeastward flow, with a maximum equatorward flow of 15-19 cm/s centered at 150 km offshore. The offshore northeastward flow, with a maximum northward velocity of 24 cm/s, was located beyond 180 km offshore out to the edge of the transection. Coupled with the southeastward California Current flow next to it, the offshore flow may indicate that a anti-cyclonic eddy was present, centered at 180 km offshore.

V. SATELLITE IMAGERY

The satellite image displayed in Figure 17 was taken by the Advanced High Resolution Radiometer (AVHRR) onboard the NOAA-11 satellite on January 18, 1990. The image is centered on coordinates 36° 30' N, 123° W, with the Pacific Coast from San Francisco to Morro Bay visible. Although the image has large data gaps west of 123° W (110 km offshore of Pt. Sur) due to cloud cover, the area is clearly dominated by water with an average SST of 12-12.5 °C. Also, three distinct SST anomalies are observable in the image.

The first SST anomaly consists of a warm band of 13-13.5 °C water, running parallel to the coast, extending southeast (35.5° N, 121-122° W) to northwest (37.5° N, 123°W). The anomaly follows the general contour of the coastline, including a detour into Monterey Bay, which implies that it is topographically steered. The width of the anomaly ranges from a maximum of 113 km at 35.5° N to a minimum of 25 km at 36.2° N. At the Pt. Sur Transection (36.3° N), the anomaly extends from 20 to 50 km offshore and corresponds to the previously discussed location of the Davidson Inshore Current.

The second SST anomaly is a band of cold water (11-11.5 °C) extending from the northwest corner of the image (38° N, 124.3-125.2° W) towards the southeast (last clearly seen at 36.2° N, 123.7° W). The cold SST anomaly also parallels the coast but ranges from 160 to 240 km offshore. The location, orientation, and temperature characteristics of the anomaly suggest that it is the California Current bringing cold subartic water southward.

The third SST anomaly is another area of warm (13-13.5 °C) water originating in the southwest corner of the image (35.4° N, 124.3° W). Although

the southwest part of the image was largely obscured by clouds, the anomaly clearly extends towards the northeast until about 36° N, 123.7° W. At that point, it bends around towards the southeast and is visible down to 35° N, 123° W.

Recalling that the transection turns southwest beyond 123° W and extends to coordinates 35.75° N, 124.2° W, the outer section (184-244 km offshore) of the anomaly corresponds to the northeastward flowing current previously identified in the ADCP and geostrophic transections. At the northern turning point of the anomaly, the warm (and most probably saline) northeastward current probably undergoes mixing with the cold, fresh water of the California Current and then travels southeastward with it. This mixing can account for the high core temperature (13.0 °C) for the California Current observed in the temperature transection (Figure 2).

The anti-cyclonic motion evident in the current structure of the anomaly and the warm temperatures present suggest that the anomaly is a warm core eddy composed of Davidson Inshore Current water. A similar anti-cyclonic eddy in was observed by Broenkow (1982) in his analysis of the VERTEX experiment in August 1980. That eddy was centered at 35.75° N, 124° W which places it in the vicinity of the January 1990 anti-cyclonic eddy.

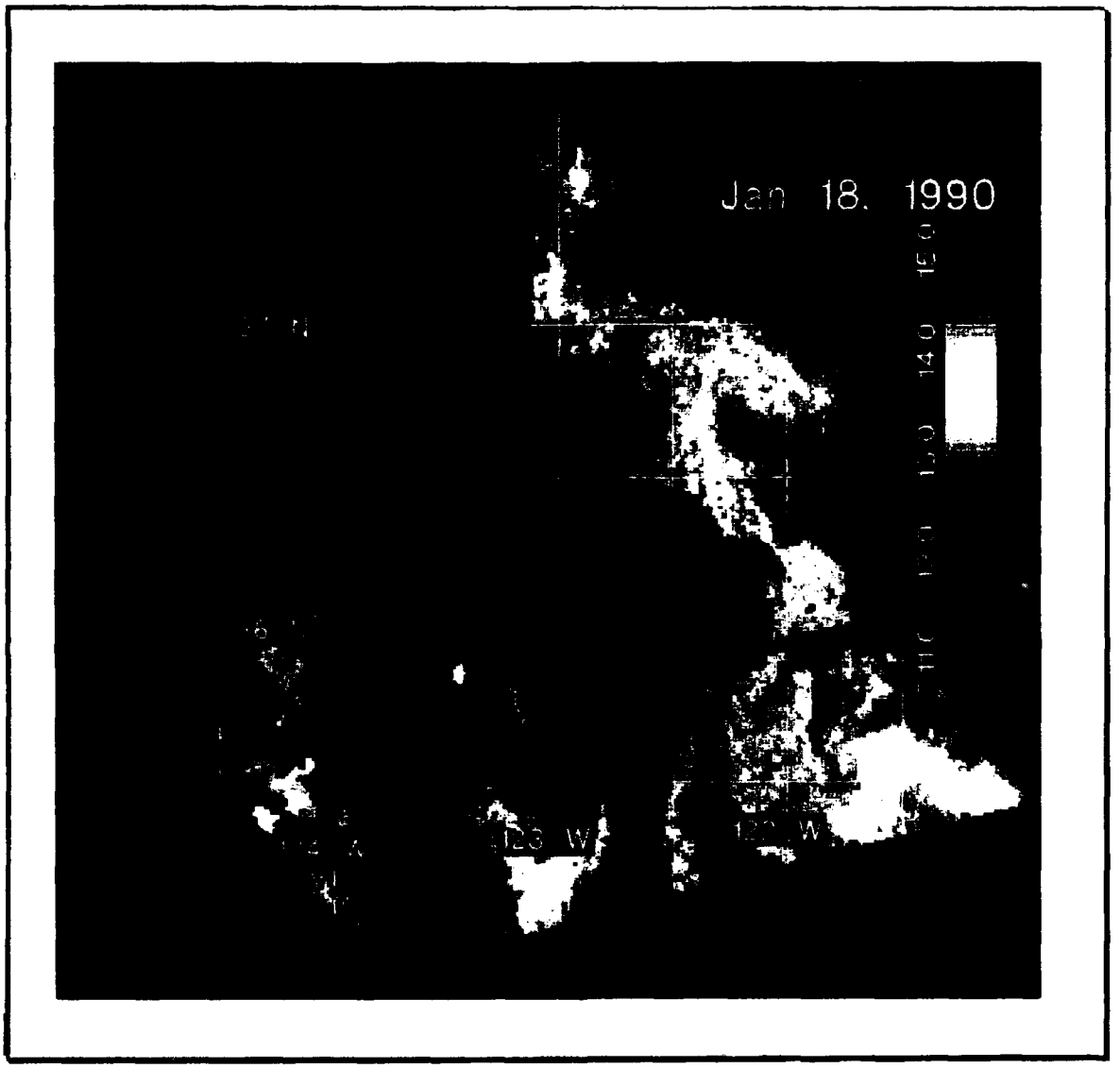


Figure 17. Sea surface temperatures (°C) along the central California coast on January 18, 1990. Image is from the AVHRR onboard the NOAA-11 satellite.

VI. COMPARISON OF DATA TO FEBRUARY 1989

A. FEBRUARY 1989 RESULTS

The data analyzed by Berryman (1989) was collected from 2-7 February 1989 by the **R.V. Pt. Sur**. The ship followed the same track and used the same equipment as the January 1990 cruise; therefore, differences in the data due to collection procedures should be minimized. However, the environmental factors between the two cruises are quite different. During February 1989, the weather of the central California coast was dominated by a strong Alaskan cold front. The average SST of the area was 11 °C, a degree and a half lower than normal (Lynn 1967).

The velocity transections of the February 1989 cruise placed the core of the Davidson Inshore Current at about 20-40 km offshore with a velocity of approximately 25 cm/s. The transition region (dynamic trough) between the California Current and the Davidson Inshore Current existed at 60-70 km offshore. Given that Berryman analyzed data only out to 140 km offshore, the eastern edge of the California Current was only partially analyzed, while the offshore northeastward flow was not discussed at all. As such, the core of the eastern California Current appeared as a 10 cm/s isotach at 140 km offshore.

The temperature and salinity transections for the February 1989 cruise were both of an anomalous structure. As stated above, the SST's were much colder than normal with an average of 11 °C, and strong stratification persisted down to the 9.0 °C isotherm at approximately 150 m. The salinity transection was very abnormal with a salinity minimum of 33.4 psu (which is the average according to

Lynn, 1967) located in the vicinity of the Davidson Inshore Current core (which should be advecting warm, saline water northward) at 30 km offshore. The upper 50 m of the transection is dominated by 33.6 psu salinities which are higher than normal (Lynn, 1967).

B. DIFFERENCES BETWEEN FEBRUARY 1989 AND JANUARY 1990

When comparing the January 1990 data to that collected one year prior in February 1989, the most obvious difference is that the dynamic trough between the California Current and the Davidson Inshore Current regimes had shifted offshore some 50 km in 1990. Although the core of the Davidson Inshore Current had shifted only some 10 km offshore between 1989 and 1990 (from the vicinity of 20-40 km offshore to 30-45 km offshore), all geophysical and velocity transections in the 1990 data point to a transition region at 120 km offshore vice 60-70 km offshore for the 1989 data. Also, an average between the geostrophic, PEGASUS, and ADCP velocity transections indicate an increase from 24 cm/s to 28 cm/s for core velocity of the Davidson Inshore Current while the eastern California Current core velocity increased from -10 cm/s to -16 cm/s (since Berryman did not perform an axis rotation, all velocities discussed in this section are north-south and east-west). Therefore, it is evident that the two currents were stronger in 1990 than in the year before. In 1990, the Davidson Inshore Current was broader, displacing the California Current offshore.

The temperature and salinity transections also display significant differences between the two data sets. The 1989 SST's were 2 °C colder than the following year when temperatures at the current cores reached 13.0°C. This difference in SST's can be attributed to the very cold weather conditions mentioned above, and

it demonstrates that the SST's are strongly effected by air-sea interaction, as well as by advection of different water masses. The salinity transections, on the other hand, display a very distinct change in structure between the two years. Whereas the 1989 salinity transection had an abnormal salinity minimum of 33.4 psu coinciding with the Davidson Inshore Current core, all water in the 1990 salinity transection, above 100 m depth, is fresher than 33.4 psu! In fact, the 1990 salinity minimum, which coincides with the eastern California Current core, is 32.9 psu. In the upper 100 m, a surface salinity maximum of 33.4 psu (an average value according to Lynn, 1967) covers the entire area within 50 km of shore and corresponds to the location of the Davidson Inshore Current.

VII. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

During January 1990, the Davidson Inshore Current was present between 10 and 120 km off Pt. Sur, advecting warm (13.0 °C) and saline (33.4 psu) water in a northwestward direction. The alongshore transport was calculated to be 8.4 Sv, and the core of the current was located 20-40 km offshore with a maximum velocity of 30-34 cm/s. When compared to the data from February 1989, the Davidson Inshore Current appeared to have shifted offshore some 50 km and increased in velocity ~4 cm/s. The presence of a strong (29 cm/s) poleward flow beneath the core of the Davidson Inshore Current, along with the extension of warm, saline water down to ~800 m, is strong evidence supporting the hypothesis that the Davidson Inshore Current is linked to the shoreward migration of the California Undercurrent.

The eastern edge of the California Current was represented by an equatorward flow located some 120-180 km offshore. The flow associated with the California Current had a core at 140-160 km offshore with a maximum equatorward speed of 19-21 cm/s. The flow advected cool (11.0 °C) and fresh (32.9 psu) water southward, with an alongshore transport of 1.5-2.2 Sv.

An unexpected result of the January 1990 cruise was the presence of the anti-cyclonic eddy in the southern and outermost region of the transection. The warm core eddy obliterated the temperature signature of the California Current, but it did not effect the salinity and spiciness transections to the same extent. Due to the repeated presence of offshore northward (anti-cyclonic) flows in studies

by Brown (1974), Broenkow (1982), and Chelton (1984), the anti-cyclonic eddy southwest of Pt. Sur may represent a semi-permanent feature analogous to the eddy off San Francisco pointed out by Wyllie (1966).

B. RECOMMENDATIONS

The continuing study of the Davidson Inshore Current and the California Current by the Naval Postgraduate School will provide more detailed knowledge of the long-term structure and variability of these currents which play an important role in the climate of the Pacific Coast of the United States. Given that the distinct submerged poleward core in the ADCP V velocity field became evident only upon rotation of the field, the rotation of V velocity fields parallel to the main flow is strongly advised when examining the Davidson Inshore Current in subsequent studies. Future studies concentrating on the outer region of the transection, beyond 123° W, should determine if a semi-permanent anti-cyclonic feature exists southwest of Pt. Sur.

APPENDIX A: CTD DERIVED DATA

The data generated by the program CTDTAB is reprinted here for reference purposes. Some of the abbreviations used are as follows:

P(DB) = pressure in db

TEMP = temperature in °C

SAL = salinity in psu

Z(M) = depth in m

RHO = density in kg/m^3 minus 1000

DEN AN = density anomaly in kg/m^3

POT0 = potential temperature in °C

SIG0 = density referenced to 0 db

SIG1 = density referenced to 1000 db

SIG2 = density referenced to 2000 db

SIG3 = density referenced to 3000 db

D = dynamic height respect to the surface in m

NSQ = Brunt-Vaisala Frequency in s^{-2}

SV = sound velocity in m/s

SPICE = spiciness

STATION: 1

1/17/90 2353 GMT LAT: 36 19.8 LON:121 55.4 AIR:11.1 C DEWPT: 0.0 C WD DIR: 307 WD SPD: 6.4

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POT0	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	12.528	33.459	0.0	25.292	25.292	12.528	25.292	29.705	34.021	38.241	.0000	0.0	496.8	0.3870
10.0	12.546	33.464	9.9	25.292	25.337	12.545	25.292	29.706	34.021	38.241	.0267	1.1	497.0	0.3945
20.0	12.536	33.463	19.9	25.293	25.383	12.533	25.294	29.707	34.022	38.243	.0534	2.4	497.1	0.3917
29.9	12.500	33.472	29.7	25.308	25.442	12.496	25.309	29.722	34.039	38.260	.0797	16 7	497.2	0.3919
35.0	12.317	33.500	34.7	25.364	25.522	12.312	25.365	29.782	34.102	38.326	.0934	41.3	496.3	0.3640
40.0	12.055	33.530	39.7	25.437	25.617	12.050	25.438	29.860	34.185	38.413	.1062	56.9	495.9	0.3504
43.0	12.022	33.535	42.7	25.448	25.641	12.017	25.448	29.871	34.197	38.426	.1138	2.6	495.8	0.3482

STATION: 2

1/18/90 41 GMT LAT: 36 20.1 LON:121 60.0 AIR:11.2 C DEWPT: 0.0 C WD DIR: 316 WD SPD: 5.7

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POT0	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	13.199	33.425	0.0	25.133	25.134	13.199	25.133	29.534	33.837	38.045	.0000	0.0	499.0	0.4953
10.0	13.196	33.429	9.9	25.137	25.182	13.195	25.137	29.538	33.841	38.049	.0282	1.4	499.1	0.4978
18.4	13.000	33.426	18.3	25.173	25.256	12.998	25.174	29.579	33.885	38.097	.0518	29.9	498.6	0.4552
20.0	12.955	33.429	19.9	25.185	25.275	12.952	25.186	29.591	33.898	38.111	.0562	23.7	498.5	0.4488
24.3	12.885	33.431	24.1	25.200	25.309	12.882	25.200	29.607	33.916	38.130	.0683	8.2	498.4	0.4359
40.0	12.683	33.437	39.7	25.244	25.424	12.678	25.246	29.656	33.969	38.187	.1113	23.2	497.9	0.4004
52.4	12.019	33.471	52.0	25.398	25.635	12.012	25.400	29.823	34.149	38.379	.1441	31.9	495.9	0.2971
53.2	12.000	33.473	52.8	25.403	25.643	11.993	25.405	29.829	34.155	38.385	.1461	24.6	495.9	0.2948
60.0	11.789	33.475	59.6	25.444	25.715	11.781	25.446	29.874	34.204	38.438	.1635	18.0	495.2	0.2558
77.7	11.000	33.479	77.1	25.592	25.942	10.991	25.593	30.038	34.384	38.633	.2067	8.8	492.8	0.1117
78.7	10.970	33.482	78.1	25.599	25.954	10.961	25.600	30.046	34.392	38.642	.2091	16.3	492.7	0.1086
80.0	10.920	33.487	79.4	25.612	25.973	10.910	25.613	30.060	34.408	38.659	.2123	30.0	492.6	0.1040
81.0	10.850	33.500	80.4	25.634	26.000	10.840	25.636	30.083	34.432	38.685	.2148	51.7	492.4	0.1014
91.7	10.580	33.583	91.0	25.746	26.161	10.569	25.748	30.201	34.554	38.812	.2392	9.3	491.7	0.1189

STATION: 3

1/18/90 111 GMT LAT: 36 20.3 LON:122 2.1 AIR:12.2 C DEWPT: 0.0 C WD DIR: 298 WD SPD: 6.2

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POT0	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	13.214	33.427	0.0	25.132	25.132	13.214	25.132	29.532	33.835	38.043	.0000	0.0	499.0	0.5000
10.0	13.185	33.424	9.9	25.136	25.181	13.184	25.136	29.537	33.840	38.048	.0283	3.9	499.1	0.4919
20.0	13.058	33.430	19.9	25.165	25.255	13.055	25.166	29.569	33.875	38.085	.0563	9.7	498.9	0.4704
22.3	13.000	33.429	22.1	25.176	25.276	12.997	25.177	29.581	33.888	38.100	.0626	15.1	498.7	0.4581
35.9	12.867	33.424	35.6	25.199	25.361	12.862	25.200	29.607	33.916	38.130	.1006	5.5	498.5	0.4273
40.0	12.730	33.434	39.7	25.233	25.413	12.725	25.234	29.644	33.956	38.172	.1117	28.8	498.1	0.4073
54.9	12.000	33.456	54.5	25.391	25.638	11.993	25.392	29.816	34.142	38.372	.1516	92.8	495.9	0.2817
55.1	11.970	33.460	54.7	25.399	25.647	11.963	25.400	29.824	34.152	38.382	.1523	94.6	495.8	0.2788
60.0	11.828	33.525	59.6	25.476	25.747	11.820	25.478	29.905	34.234	38.467	.1647	29.1	495.5	0.3034
74.8	11.132	33.519	74.2	25.599	25.936	11.123	25.600	30.041	34.385	38.632	.2011	29.9	493.3	0.1677
79.1	11.000	33.572	78.5	25.663	26.020	10.990	25.665	30.109	34.454	38.703	.2111	50.4	492.9	0.1856
80.0	10.925	33.571	79.4	25.676	26.038	10.915	25.678	30.124	34.471	38.721	.2133	46.9	492.7	0.1715
83.0	10.831	33.600	82.4	25.715	26.090	10.821	25.717	30.164	34.513	38.766	.2201	45.2	492.5	0.1772
87.1	10.473	33.626	86.5	25.798	26.192	10.463	25.800	30.255	34.610	38.870	.2294	75.2	491.2	0.1340
98.9	10.000	33.735	98.2	25.965	26.413	9.989	25.966	30.430	34.795	39.063	.2547	90.3	489.9	0.1384
100.0	9.909	33.750	99.2	25.992	26.445	9.898	25.993	30.459	34.826	39.096	.2569	86.7	489.6	0.1348
100.7	9.890	33.755	99.9	25.999	26.455	9.879	26.000	30.466	34.833	39.104	.2584	63.0	489.6	0.1355
124.1	9.759	33.800	123.1	26.055	26.618	9.745	26.057	30.526	34.896	39.168	.3049	10.1	489.5	0.1488
125.0	9.745	33.807	124.0	26.063	26.630	9.731	26.065	30.534	34.904	39.177	.3067	27.0	489.5	0.1519

STATION: 4

1/18/90 148 GMT LAT: 36 20.3 LON:122 5.9 AIR:11.3 C DEWPT: 0.0 C WD DIR: 316 WD SPD: 5.2

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POTO	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	13.076	33.415	0.0	25.150	25.151	13.076	25.150	29.553	33.858	38.069	.0000	0.0	498.6	0.4623
10.0	13.082	33.414	9.9	25.148	25.193	13.081	25.149	29.551	33.857	38.067	.0281	1.5	498.7	0.4627
20.0	13.018	33.415	19.9	25.162	25.252	13.015	25.162	29.567	33.873	38.085	.0561	8.1	498.7	0.4508
21.2	13.000	33.416	21.1	25.166	25.261	12.997	25.166	29.571	33.878	38.090	.0596	10.1	498.6	0.4475
29.3	12.840	33.418	29.1	25.199	25.331	12.836	25.200	29.608	33.918	38.133	.0821	16.6	498.2	0.4172
40.0	12.681	33.424	39.7	25.235	25.415	12.676	25.236	29.646	33.959	38.177	.1114	2.2	497.9	0.3897
49.2	12.000	33.429	48.8	25.369	25.591	11.994	25.370	29.795	34.120	38.352	.1364	118.3	495.7	0.2599
52.2	11.743	33.405	51.8	25.399	25.634	11.737	25.400	29.829	34.161	38.397	.1442	20.7	494.9	0.1918
52.9	11.689	33.400	52.5	25.404	25.643	11.682	25.406	29.837	34.169	38.406	.1458	25.3	494.7	0.1774
57.2	11.000	33.330	56.8	25.474	25.734	10.993	25.476	29.921	34.269	38.519	.1568	44.3	492.3	-0.0069
60.0	10.938	33.361	59.6	25.510	25.782	10.931	25.512	29.958	34.306	38.558	.1638	40.5	492.2	0.0067
70.6	10.597	33.397	70.1	25.598	25.918	10.589	25.600	30.053	34.408	38.666	.1895	21.9	491.1	-0.0261
71.1	10.587	33.400	70.6	25.603	25.924	10.579	25.604	30.058	34.412	38.671	.1907	23.9	491.1	-0.0255
80.0	10.332	33.503	79.4	25.727	26.089	10.323	25.729	30.187	34.546	38.809	.2116	76.4	490.5	0.0118
84.8	10.118	33.548	84.2	25.798	26.183	10.108	25.800	30.263	34.626	38.893	.2223	71.3	489.9	0.0104
86.5	10.000	33.583	85.9	25.846	26.238	9.990	25.847	30.313	34.678	38.947	.2260	89.3	489.5	0.0179
87.3	9.948	33.600	86.7	25.867	26.263	9.938	25.868	30.335	34.702	38.972	.2278	82.8	489.4	0.0221
90.1	10.000	33.656	89.4	25.903	26.311	9.990	25.904	30.369	34.734	39.003	.2338	36.4	489.6	0.0757
93.6	9.658	33.706	92.9	25.998	26.423	9.648	26.000	30.471	34.844	39.119	.2409	122.3	488.6	0.0568
95.6	9.465	33.800	94.9	26.103	26.538	9.455	26.105	30.581	34.957	39.235	.2449	165.8	488.0	0.0996
100.0	9.438	33.837	99.2	26.137	26.592	9.427	26.139	30.615	34.991	39.270	.2533	12.5	488.0	0.1248
103.9	9.387	33.904	103.1	26.198	26.670	9.376	26.200	30.676	35.053	39.332	.2606	71.9	488.0	0.1695
130.8	9.154	34.000	129.8	26.310	26.905	9.140	26.313	30.793	35.174	39.458	.3082	14.6	487.7	0.2070
150.0	9.033	34.030	148.8	26.353	27.035	9.017	26.356	30.839	35.223	39.509	.3412	16.2	487.6	0.2113
153.2	9.000	34.041	152.0	26.368	27.064	8.984	26.370	30.854	35.238	39.525	.3465	15.3	487.5	0.2149
165.7	8.913	34.062	164.4	26.398	27.151	8.895	26.400	30.886	35.272	39.560	.3673	20.4	487.4	0.2177
185.0	8.772	34.100	183.6	26.449	27.291	8.753	26.452	30.940	35.329	39.620	.3985	2.8	487.3	0.2250
200.0	8.671	34.116	198.4	26.478	27.388	8.650	26.481	30.971	35.362	39.656	.4222	4.1	487.2	0.2217
249.2	8.215	34.178	247.2	26.596	27.732	8.190	26.600	31.100	35.501	39.803	.4979	14.7	486.3	0.2006
279.6	8.130	34.200	277.4	26.626	27.900	8.102	26.630	31.133	35.535	39.839	.5421	3.9	486.6	0.2051
293.4	8.000	34.208	291.0	26.651	27.988	7.970	26.656	31.161	35.567	39.873	.5619	3.9	486.3	0.1916
304.3	7.904	34.200	301.9	26.660	28.047	7.874	26.664	31.172	35.579	39.888	.5775	7.4	486.1	0.1714
343.5	7.224	34.172	340.7	26.735	28.306	7.191	26.740	31.264	35.687	40.011	.6318	1.6	484.1	0.0513

STATION: 5

1/18/90 300 GMT LAT: 36 20.3 LON:122 8.8 AIR:11.7 C DEWPT: 0.0 C WD DIR: 315 WD SPD: 6.8

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POTO	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	13.361	33.446	0.0	25.117	25.118	13.361	25.117	29.514	33.814	38.019	.0000	0.0	499.5	0.5453
10.0	13.387	33.446	9.9	25.112	25.158	13.386	25.112	29.509	33.808	38.013	.0284	1.5	499.8	0.5507
20.0	13.365	33.447	19.9	25.117	25.207	13.362	25.118	29.515	33.814	38.020	.0568	3.7	499.9	0.5469
39.9	13.000	33.426	39.6	25.174	25.353	12.995	25.175	29.579	33.887	38.098	.1131	46.1	499.0	0.4556
40.0	12.987	33.425	39.7	25.175	25.355	12.982	25.176	29.581	33.889	38.101	.1134	48.6	498.9	0.4521
40.6	12.819	33.413	40.3	25.199	25.381	12.814	25.200	29.608	33.919	38.134	.1152	71.8	498.4	0.4091
41.3	12.631	33.400	41.0	25.226	25.411	12.626	25.227	29.639	33.953	38.172	.1170	97.3	497.7	0.3610
43.4	12.000	33.361	43.1	25.316	25.511	11.994	25.317	29.741	34.068	38.300	.1227	133.7	495.6	0.2061
53.1	11.424	33.330	52.7	25.399	25.639	11.417	25.400	29.837	34.175	38.418	.1480	21.8	493.7	0.0718
55.0	11.533	33.400	54.6	25.433	25.681	11.526	25.434	29.868	34.204	38.444	.1529	54.6	494.2	0.1480

60.0	11.551	33.510	59.6	25.516	25.787	11.544	25.518	29.950	34.285	38.524	.1654	35.1	494.5	0.2390
66.2	11.180	33.529	65.7	25.598	25.897	11.172	25.600	30.040	34.382	38.628	.1804	20.8	493.3	0.1848
75.8	11.055	33.600	75.2	25.676	26.018	11.046	25.677	30.120	34.464	38.712	.2031	22.4	493.1	0.2180
77.2	11.000	33.616	76.6	25.698	26.046	10.991	25.699	30.143	34.488	38.737	.2062	40.5	492.9	0.2204
80.0	10.890	33.643	79.4	25.738	26.100	10.880	25.740	30.186	34.533	38.784	.2126	41.1	492.7	0.2221
84.7	10.587	33.651	84.1	25.798	26.181	10.577	25.800	30.252	34.605	38.862	.2231	56.1	491.7	0.1744
91.8	10.000	33.617	91.1	25.872	26.288	9.990	25.874	30.338	34.704	38.973	.2386	12.2	489.6	0.0446
94.0	9.797	33.600	93.3	25.893	26.319	9.786	25.895	30.364	34.734	39.007	.2432	32.1	488.9	-0.0036
100.0	9.722	33.654	99.2	25.947	26.401	9.711	25.949	30.420	34.792	39.065	.2558	31.3	488.8	0.0267
104.0	9.675	33.709	103.2	25.998	26.470	9.663	26.000	30.471	34.843	39.118	.2640	21.6	488.8	0.0623
107.8	9.502	33.800	107.0	26.098	26.588	9.490	26.100	30.574	34.949	39.227	.2715	84.4	488.3	0.1056
123.2	9.243	33.874	122.3	26.198	26.758	9.230	26.200	30.680	35.060	39.342	.3003	20.1	487.7	0.1220
133.3	9.000	33.894	132.3	26.252	26.858	8.986	26.254	30.739	35.124	39.412	.3185	19.9	487.0	0.0985
150.0	8.800	33.931	148.8	26.313	26.996	8.784	26.315	30.805	35.194	39.486	.3478	12.6	486.6	0.0961
168.5	8.538	33.988	167.2	26.397	27.165	8.521	26.400	30.894	35.289	39.586	.3790	29.5	486.0	0.0997
169.2	8.530	34.000	167.9	26.408	27.179	8.512	26.411	30.906	35.301	39.598	.3802	38.8	486.0	0.1081
200.0	8.613	34.117	198.4	26.487	27.397	8.592	26.490	30.982	35.375	39.669	.4294	1.9	487.0	0.2135
254.2	8.253	34.186	252.2	26.596	27.755	8.227	26.600	31.100	35.500	39.801	.5116	5.8	486.6	0.2125
264.7	8.150	34.200	262.6	26.623	27.829	8.123	26.627	31.129	35.531	39.835	.5269	6.8	486.4	0.2081
281.6	8.000	34.222	279.3	26.662	27.946	7.972	26.666	31.172	35.577	39.884	.5510	10.0	486.1	0.2029
314.9	7.623	34.200	312.3	26.701	28.138	7.592	26.705	31.219	35.633	39.949	.5976	9.3	485.2	0.1301
346.1	7.169	34.200	343.3	26.765	28.348	7.136	26.770	31.294	35.719	40.044	.6398	7.7	484.0	0.0657
361.9	7.067	34.220	358.9	26.795	28.450	7.033	26.800	31.327	35.754	40.082	.6605	8.3	483.9	0.0675
368.4	7.000	34.223	365.4	26.806	28.492	6.966	26.811	31.340	35.768	40.097	.6689	8.0	483.7	0.0605
400.0	6.711	34.239	396.7	26.858	28.690	6.674	26.863	31.399	35.833	40.169	.7086	1.6	483.1	0.0337
506.7	6.000	34.238	502.4	26.950	29.276	5.956	26.955	31.509	35.960	40.312	.8356	5.8	482.1	-0.0599
523.5	5.751	34.255	519.0	26.995	29.401	5.706	27.000	31.560	36.017	40.374	.8546	7.4	481.4	-0.0772
568.3	5.342	34.284	563.4	27.067	29.683	5.295	27.073	31.642	36.109	40.476	.9035	4.1	480.5	-0.1037
600.0	5.266	34.296	594.7	27.085	29.847	5.217	27.091	31.663	36.132	40.500	.9364	0.8	480.8	-0.1031
684.3	5.148	34.303	678.2	27.105	30.254	5.092	27.112	31.686	36.158	40.530	.0230	1.5	481.7	-0.1114
693.8	5.148	34.305	687.6	27.107	30.298	5.091	27.113	31.688	36.160	40.531	.0328	0.0	481.8	-0.1098

STATION: 6

1/18/90 418 GMT LAT: 36 20.4 LON:122 13.2 AIR:11.6 C DEWPT: 0.0 C WD DIR: 325 WD SPD: 6.6

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POTO	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.2	13.533	33.449	0.2	25.085	25.086	13.533	25.085	29.479	33.775	37.977	.0000	0.0	500.1	0.5834
10.0	13.524	33.462	9.9	25.096	25.141	13.523	25.097	29.491	33.788	37.990	.0280	3.2	500.3	0.5920
20.0	13.533	33.464	19.9	25.096	25.186	13.530	25.097	29.491	33.787	37.989	.0566	0.1	500.5	0.5951
23.7	13.535	33.463	23.5	25.095	25.202	13.532	25.096	29.489	33.786	37.988	.0672	0.0	500.5	0.5948
40.0	13.522	33.462	39.7	25.097	25.276	13.516	25.098	29.492	33.789	37.991	.1138	0.4	500.7	0.5910
49.2	13.023	33.464	48.8	25.199	25.419	13.016	25.200	29.604	33.910	38.122	.1400	122.2	499.3	0.4907
49.3	13.000	33.465	48.9	25.204	25.425	12.993	25.205	29.609	33.916	38.128	.1404	127.1	499.2	0.4865
56.7	12.000	33.467	56.3	25.399	25.654	11.993	25.400	29.824	34.150	38.380	.1602	111.6	495.9	0.2903
60.0	11.398	33.432	59.5	25.483	25.754	11.391	25.484	29.921	34.259	38.502	.1685	70.0	493.9	0.1486
63.8	11.000	33.404	63.3	25.533	25.821	10.992	25.534	29.979	34.326	38.576	.1780	16.9	492.4	0.0519
64.2	10.957	33.400	63.7	25.538	25.828	10.949	25.539	29.985	34.332	38.584	.1790	21.5	492.3	0.0412
80.0	10.621	33.522	79.4	25.691	26.053	10.612	25.693	30.145	34.499	38.756	.2159	6.2	491.5	0.0779
87.0	10.000	33.512	86.3	25.790	26.185	9.990	25.792	30.257	34.624	38.893	.2318	65.8	489.4	-0.0390
87.3	9.946	33.511	86.7	25.798	26.195	9.936	25.800	30.266	34.634	38.904	.2325	71.7	489.2	-0.0490
92.7	9.968	33.600	92.0	25.864	26.285	9.957	25.866	30.331	34.698	38.968	.2442	40.4	489.5	0.0255
93.2	10.000	33.617	92.5	25.872	26.295	9.989	25.874	30.339	34.705	38.974	.2452	47.4	489.7	0.0449

100.0	10.012	33.665	99.2	25.907	26.361	10.001	25.909	30.373	34.739	39.007	.2596	16.7	489.9	0.0846
100.3	10.000	33.667	99.5	25.911	26.366	9.989	25.913	30.378	34.743	39.012	.2602	21.9	489.8	0.0845
109.9	9.766	33.728	109.1	25.998	26.496	9.754	26.000	30.469	34.839	39.112	.2799	16.1	489.2	0.0931
124.7	9.550	33.800	123.7	26.089	26.656	9.536	26.092	30.565	34.939	39.216	.3093	43.2	488.7	0.1137
141.6	9.189	33.863	140.5	26.198	26.841	9.174	26.200	30.681	35.063	39.346	.3411	13.2	487.8	0.1043
147.9	9.000	33.863	146.7	26.228	26.900	8.984	26.230	30.715	35.101	39.389	.3525	20.1	487.3	0.0739
150.0	8.925	33.881	148.8	26.254	26.936	8.909	26.256	30.743	35.130	39.419	.3564	38.5	487.1	0.0762
185.6	8.509	33.981	184.2	26.397	27.242	8.490	26.400	30.895	35.291	39.588	.4171	3.7	486.2	0.0899
191.0	8.389	34.000	189.5	26.430	27.300	8.369	26.433	30.931	35.329	39.629	.4260	14.7	485.8	0.0864
200.0	8.222	34.028	198.4	26.477	27.389	8.202	26.480	30.982	35.384	39.687	.4403	22.0	485.4	0.0833
229.0	8.000	34.078	227.2	26.550	27.594	7.977	26.554	31.060	35.466	39.774	.4850	4.6	485.1	0.0895
258.4	7.727	34.087	256.4	26.597	27.777	7.702	26.600	31.113	35.525	39.839	.5287	3.7	484.6	0.0564
283.3	7.939	34.200	281.0	26.654	27.946	7.911	26.658	31.165	35.572	39.880	.5647	16.4	485.9	0.1765
363.9	7.000	34.202	360.9	26.790	28.455	6.966	26.795	31.324	35.752	40.081	.6743	4.4	483.6	0.0440
371.1	6.955	34.201	368.0	26.795	28.494	6.920	26.800	31.331	35.760	40.089	.6836	4.6	483.6	0.0373
400.0	6.632	34.211	396.7	26.847	28.680	6.595	26.852	31.390	35.827	40.164	.7203	2.2	482.8	0.0011
407.0	6.513	34.200	403.6	26.854	28.720	6.476	26.859	31.400	35.839	40.179	.7290	1.2	482.4	-0.0234
417.6	6.384	34.200	414.1	26.871	28.786	6.347	26.876	31.420	35.862	40.205	.7421	2.8	482.1	-0.0403
487.1	6.000	34.250	483.0	26.960	29.196	5.958	26.965	31.518	35.969	40.321	.8250	3.9	481.8	-0.0503
519.3	5.765	34.256	514.8	26.994	29.380	5.721	27.000	31.559	36.016	40.373	.8616	7.3	481.4	-0.0744
600.0	5.406	34.308	594.7	27.079	29.838	5.356	27.084	31.652	36.118	40.483	.9495	1.8	481.3	-0.0771
689.1	5.000	34.369	682.9	27.175	30.347	4.944	27.181	31.759	36.234	40.608	.0384	9.4	481.2	-0.0761
713.7	4.907	34.380	707.2	27.194	30.480	4.850	27.200	31.781	36.258	40.635	.0617	4.4	481.3	-0.0783
800.0	4.670	34.390	792.6	27.229	30.914	4.607	27.236	31.822	36.305	40.687	.1417	1.0	481.7	-0.0968
825.4	4.500	34.397	817.7	27.253	31.057	4.436	27.260	31.850	36.337	40.724	.1645	4.3	481.5	-0.1101
832.7	4.459	34.400	824.9	27.259	31.098	4.394	27.266	31.858	36.346	40.734	.1710	3.8	481.4	-0.1120
943.8	4.139	34.434	934.8	27.321	31.673	4.067	27.328	31.928	36.425	40.820	.2654	1.4	482.0	-0.1191

STATION: 7

1/18/90 518 GMT LAT: 36 20.2 LON:122 15.5 AIR:11.6 C DEWPT: 0.0 C WD DIR: 317 WD SPD: 6.6

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POTO	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	13.548	33.460	0.0	25.090	25.091	13.548	25.090	29.483	33.780	37.981	.0000	0.0	500.2	0.5952
10.0	13.548	33.460	9.9	25.090	25.136	13.547	25.090	29.484	33.780	37.982	.0286	0.0	500.3	0.5952
20.0	13.558	33.458	19.9	25.087	25.177	13.555	25.087	29.480	33.777	37.978	.0573	0.6	500.5	0.5957
33.9	13.558	33.457	33.6	25.086	25.238	13.553	25.087	29.480	33.776	37.978	.0972	5.2	500.8	0.5949
40.0	13.398	33.436	39.7	25.102	25.281	13.392	25.103	29.499	33.799	38.004	.1147	20.3	500.3	0.5448
41.3	13.000	33.421	41.0	25.169	25.355	12.994	25.170	29.574	33.882	38.094	.1184	118.9	499.0	0.4518
41.8	12.826	33.414	41.5	25.199	25.387	12.820	25.200	29.608	33.918	38.133	.1198	162.3	498.4	0.4113
43.0	12.500	33.400	42.7	25.251	25.445	12.494	25.252	29.667	33.983	38.205	.1231	151.5	497.3	0.3351
45.1	12.000	33.376	44.8	25.328	25.531	11.994	25.329	29.754	34.080	38.312	.1287	116.8	495.6	0.2183
47.0	11.558	33.362	46.6	25.399	25.611	11.552	25.400	29.834	34.169	38.409	.1336	119.1	494.1	0.1227
49.2	11.000	33.355	48.8	25.494	25.717	10.994	25.496	29.941	34.288	38.538	.1392	135.8	492.2	0.0137
P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POTO	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
54.6	10.463	33.368	54.2	25.599	25.847	10.457	25.600	30.057	34.415	38.676	.1523	44.7	490.4	-0.0726
60.0	10.372	33.396	59.6	25.636	25.908	10.365	25.638	30.096	34.455	38.718	.1652	8.7	490.2	-0.0669
60.5	10.367	33.400	60.1	25.640	25.915	10.360	25.642	30.100	34.459	38.722	.1664	12.5	490.2	-0.0643
78.6	10.159	33.557	78.0	25.799	26.155	10.150	25.800	30.262	34.625	38.891	.2075	22.7	489.9	0.0245
80.0	10.153	33.567	79.4	25.807	26.170	10.144	25.809	30.271	34.634	38.900	.2106	20.1	489.9	0.0312
83.8	10.047	33.600	83.2	25.851	26.231	10.037	25.853	30.316	34.681	38.949	.2189	42.0	489.7	0.0390
93.1	10.000	33.666	92.4	25.910	26.333	9.989	25.912	30.377	34.742	39.010	.2387	29.2	489.7	0.0835
100.0	9.641	33.671	99.2	25.974	26.427	9.630	25.976	30.448	34.820	39.096	.2529	13.5	488.5	0.0261

101.8	9.515	33.675	101.0	25.998	26.460	9.504	26.000	30.475	34.850	39.129	.2566	41.8	488.1	0.0090
114.7	9.386	33.800	113.8	26.116	26.638	9.374	26.118	30.596	34.973	39.253	.2819	21.7	488.1	0.0865
123.3	9.138	33.853	122.4	26.198	26.759	9.125	26.200	30.682	35.064	39.349	.2980	32.7	487.3	0.0881
150.0	8.594	33.989	148.8	26.390	27.073	8.578	26.393	30.886	35.279	39.575	.3446	32.7	485.9	0.1096
150.9	8.568	33.994	149.7	26.397	27.085	8.552	26.400	30.894	35.288	39.584	.3461	30.0	485.8	0.1090
154.7	8.518	34.000	153.5	26.410	27.115	8.502	26.413	30.908	35.302	39.600	.3524	5.2	485.7	0.1062
330.1	7.405	34.145	327.4	26.688	28.197	7.373	26.693	31.213	35.632	39.953	.6130	22.0	484.6	0.0555
372.4	7.083	34.200	369.3	26.777	28.480	7.048	26.782	31.309	35.735	40.063	.6700	3.3	484.1	0.0537
383.2	7.072	34.221	380.0	26.795	28.547	7.036	26.800	31.327	35.753	40.081	.6840	4.0	484.2	0.0687
392.4	7.000	34.217	389.2	26.802	28.597	6.963	26.807	31.335	35.763	40.092	.6959	0.1	484.1	0.0555
400.0	6.890	34.218	396.7	26.818	28.648	6.853	26.823	31.354	35.785	40.117	.7057	1.9	483.8	0.0414
504.4	6.000	34.253	500.1	26.962	29.278	5.956	26.968	31.521	35.972	40.324	.8336	4.8	482.1	-0.0474
532.2	5.835	34.268	527.6	26.994	29.439	5.789	27.000	31.557	36.013	40.368	.8649	2.2	481.9	-0.0566
600.0	5.185	34.294	594.7	27.094	29.856	5.136	27.100	31.673	36.144	40.514	.9376	9.0	480.4	-0.1142
650.2	5.000	34.318	644.4	27.134	30.129	4.948	27.140	31.718	36.193	40.568	.9881	8.1	480.5	-0.1166
702.6	4.896	34.378	696.3	27.194	30.430	4.840	27.200	31.781	36.258	40.635	.0387	8.6	481.1	-0.0807
774.1	4.681	34.400	767.0	27.235	30.801	4.620	27.242	31.828	36.310	40.693	.1044	3.1	481.4	-0.0878
800.0	4.590	34.404	792.6	27.249	30.934	4.527	27.256	31.844	36.329	40.713	.1276	2.3	481.4	-0.0947
999.6	4.000	34.453	989.9	27.351	31.960	3.924	27.359	31.962	36.462	40.861	.2980	3.4	482.4	-0.1186
999.8	3.999	34.453	990.1	27.351	31.961	3.923	27.359	31.962	36.462	40.861	.2982	3.6	482.4	-0.1186

STATION: 8

1/18/90 848 GMT LAT: 36 20.0 LON:122 19.4 AIR:11.7 C DEWPT: 0.0 C WD DIR: 305 WD SPD: 6.6

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POT0	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	13.427	33.427	0.0	25.089	25.090	13.427	25.089	29.485	33.784	37.988	.0000	0.0	499.7	0.5439
10.0	13.432	33.427	9.9	25.088	25.133	13.431	25.088	29.484	33.783	37.987	.0286	0.4	499.9	0.5449
20.0	13.434	33.427	19.9	25.088	25.178	13.431	25.088	29.484	33.783	37.987	.0573	0.0	500.1	0.5454
38.0	13.425	33.427	37.7	25.090	25.260	13.420	25.091	29.487	33.786	37.990	.1090	0.0	500.4	0.5435
40.0	13.409	33.426	39.7	25.092	25.271	13.403	25.094	29.490	33.789	37.994	.1147	4.2	500.3	0.5394
43.5	13.000	33.402	43.2	25.156	25.350	12.994	25.157	29.561	33.869	38.081	.1247	94.1	499.0	0.4370
43.7	12.945	33.400	43.4	25.165	25.360	12.939	25.166	29.571	33.880	38.093	.1253	107.5	498.8	0.4238
44.5	12.744	33.393	44.2	25.199	25.399	12.738	25.200	29.610	33.922	38.139	.1276	126.8	498.2	0.3779
47.0	12.000	33.378	46.7	25.329	25.541	11.994	25.330	29.755	34.082	38.313	.1344	173.9	495.6	0.2199
48.5	11.591	33.370	48.1	25.399	25.618	11.585	25.400	29.833	34.168	38.407	.1381	163.9	494.3	0.1353
53.5	11.000	33.381	53.1	25.514	25.757	10.994	25.516	29.961	34.308	38.558	.1507	45.6	492.3	0.0337
60.0	10.804	33.393	59.6	25.559	25.831	10.797	25.560	30.010	34.360	38.615	.1666	27.9	491.7	0.0083
61.3	10.741	33.400	60.8	25.575	25.853	10.734	25.577	30.027	34.379	38.634	.1698	34.1	491.5	0.0022
63.0	10.642	33.407	62.5	25.598	25.883	10.634	25.600	30.052	34.406	38.663	.1738	43.4	491.2	-0.0100
75.3	10.113	33.547	74.7	25.799	26.140	10.104	25.800	30.263	34.627	38.894	.2021	17.9	489.7	0.0087
78.0	10.000	33.542	77.4	25.814	26.168	9.991	25.815	30.281	34.647	38.917	.2081	17.6	489.3	-0.0147
80.0	9.855	33.559	79.4	25.851	26.214	9.846	25.852	30.321	34.690	38.962	.2123	60.2	488.9	-0.0263
85.8	9.754	33.600	85.2	25.900	26.289	9.744	25.901	30.371	34.743	39.017	.2247	45.3	488.7	-0.0108
92.7	9.483	33.670	92.0	25.999	26.420	9.473	26.000	30.476	34.853	39.132	.2388	48.6	487.8	-0.0009
100.0	9.193	33.739	99.2	26.100	26.555	9.181	26.102	30.583	34.965	39.251	.2533	24.0	487.0	0.0065
109.7	9.091	33.800	108.9	26.164	26.663	9.079	26.166	30.650	35.033	39.320	.2715	13.1	486.9	0.0384
119.8	9.039	33.832	118.9	26.197	26.742	9.026	26.200	30.684	35.068	39.356	.2902	33.5	486.9	0.0558
120.9	9.000	33.844	120.0	26.213	26.763	8.987	26.215	30.700	35.086	39.373	.2921	41.1	486.8	0.0588
150.0	8.689	33.959	148.8	26.352	27.035	8.673	26.354	30.846	35.237	39.531	.3426	13.1	486.2	0.1008
154.7	8.610	34.000	153.5	26.396	27.100	8.594	26.398	30.892	35.285	39.579	.3505	37.5	486.0	0.1206
154.8	8.607	34.002	153.6	26.398	27.103	8.591	26.400	30.894	35.287	39.581	.3507	37.7	486.0	0.1217
200.0	8.177	34.073	198.4	26.519	27.431	8.157	26.522	31.024	35.427	39.730	.4223	2.3	485.3	0.1119

216.1	8.000	34.071	214.4	26.544	27.530	7.978	26.548	31.054	35.460	39.768	.4470	22.5	484.9	0.0841
239.8	7.822	34.105	237.9	26.597	27.692	7.798	26.600	31.111	35.520	39.832	.4824	11.0	484.6	0.0843
340.6	7.056	34.200	337.8	26.781	28.339	7.024	26.785	31.313	35.739	40.067	.6211	7.9	483.4	0.0499
349.5	7.000	34.207	346.6	26.794	28.394	6.967	26.799	31.328	35.755	40.084	.6326	5.0	483.4	0.0477
351.7	6.976	34.205	348.8	26.795	28.405	6.943	26.800	31.330	35.758	40.088	.6355	2.3	483.3	0.0430
400.0	6.644	34.218	396.7	26.851	28.683	6.608	26.856	31.394	35.830	40.167	.6966	2.6	482.8	0.0083
488.9	6.000	34.248	484.8	26.958	29.203	5.957	26.964	31.518	35.969	40.320	.8031	2.5	481.8	-0.0513
508.7	5.603	34.232	504.4	26.995	29.335	5.560	27.000	31.563	36.024	40.385	.8255	6.8	480.6	-0.1135
600.0	5.393	34.298	594.7	27.072	29.832	5.343	27.078	31.646	36.112	40.477	.9237	2.0	481.3	-0.0865
700.4	5.000	34.369	694.1	27.175	30.399	4.943	27.181	31.759	36.234	40.608	.0246	4.0	481.4	-0.0764
723.8	4.893	34.378	717.2	27.194	30.527	4.835	27.200	31.781	36.258	40.635	.0468	7.0	481.4	-0.0815
725.8	4.890	34.377	719.2	27.194	30.535	4.832	27.200	31.780	36.258	40.635	.0487	0.8	481.4	-0.0826
781.9	4.599	34.400	774.7	27.244	30.848	4.538	27.251	31.839	36.324	40.708	.0998	2.2	481.2	-0.0968
800.0	4.522	34.403	792.6	27.255	30.943	4.460	27.262	31.852	36.338	40.724	.1159	1.0	481.2	-0.1028
963.4	4.148	34.428	954.1	27.315	31.756	4.074	27.323	31.923	36.419	40.814	.2550	1.5	482.3	-0.1229

STATION: 9

1/18/90 953 GMT LAT: 36 20.2 LON:122 22.4 AIR:11.8 C DEWPT: 0.0 C WD DIR: 297 WD SPD: 6.7

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POT0	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	13.371	33.428	0.0	25.101	25.102	13.371	25.101	29.498	33.798	38.003	.0000	0.0	499.6	0.5331
10.0	13.371	33.428	9.9	25.101	25.147	13.370	25.102	29.499	33.799	38.003	.0285	0.3	499.7	0.5331
20.0	13.376	33.428	19.9	25.100	25.190	13.373	25.101	29.498	33.798	38.002	.0570	0.6	499.9	0.5342
40.0	13.366	33.423	39.7	25.098	25.278	13.361	25.099	29.497	33.797	38.002	.1142	4.0	500.2	0.5282
48.5	13.234	33.400	48.1	25.107	25.324	13.227	25.109	29.508	33.811	38.019	.1386	9.2	499.9	0.4828
51.0	13.000	33.392	50.6	25.147	25.376	12.993	25.148	29.553	33.860	38.073	.1456	58.7	499.1	0.4284
52.4	12.695	33.382	52.0	25.199	25.434	12.688	25.200	29.611	33.924	38.142	.1496	104.8	498.1	0.3597
57.9	12.000	33.322	57.5	25.286	25.546	11.993	25.287	29.712	34.039	38.271	.1646	39.3	495.8	0.1747
60.0	11.558	33.320	59.6	25.366	25.637	11.551	25.367	29.802	34.138	38.378	.1701	122.5	494.3	0.0891
60.6	11.378	33.320	60.2	25.399	25.673	11.371	25.400	29.838	34.178	38.422	.1717	138.1	493.7	0.0556
62.1	11.000	33.319	61.6	25.467	25.748	10.993	25.468	29.914	34.261	38.512	.1755	147.9	492.3	-0.0149
70.0	10.531	33.382	69.5	25.598	25.916	10.523	25.600	30.055	34.411	38.671	.1947	33.4	490.9	-0.0494
72.7	10.484	33.400	72.1	25.620	25.949	10.476	25.622	30.078	34.435	38.695	.2011	25.9	490.8	-0.0437
80.0	10.454	33.467	79.4	25.677	26.040	10.445	25.679	30.136	34.492	38.753	.2183	29.1	490.9	0.0043
85.0	10.225	33.572	84.4	25.798	26.184	10.215	25.800	30.260	34.622	38.886	.2296	84.7	490.3	0.0475
86.8	10.000	33.581	86.1	25.844	26.237	9.990	25.845	30.310	34.677	38.945	.2336	81.5	489.5	0.0157
90.8	9.691	33.600	90.1	25.910	26.322	9.681	25.912	30.384	34.756	39.031	.2421	51.8	488.5	-0.0215
96.7	9.433	33.659	96.0	25.999	26.438	9.422	26.000	30.478	34.855	39.135	.2542	40.4	487.7	-0.0175
100.0	9.361	33.663	99.2	26.013	26.468	9.350	26.015	30.494	34.872	39.154	.2608	11.6	487.5	-0.0262
109.6	9.046	33.800	108.8	26.171	26.670	9.034	26.173	30.657	35.042	39.330	.2794	49.4	486.7	0.0312
111.6	9.000	33.823	110.8	26.196	26.704	8.988	26.198	30.684	35.070	39.358	.2830	41.9	486.6	0.0425
111.8	8.998	33.825	111.0	26.198	26.707	8.986	26.200	30.686	35.072	39.360	.2836	38.2	486.6	0.0435
134.0	8.915	33.900	133.0	26.270	26.880	8.901	26.272	30.759	35.146	39.436	.3234	28.2	486.7	0.0895
150.0	8.703	33.986	148.8	26.370	27.053	8.687	26.373	30.864	35.255	39.548	.3506	10.5	486.3	0.1239
154.7	8.609	34.000	153.5	26.396	27.100	8.593	26.398	30.891	35.284	39.579	.3584	24.3	486.1	0.1205
155.3	8.601	34.001	154.1	26.398	27.105	8.585	26.400	30.894	35.287	39.582	.3594	14.8	486.0	0.1197
200.0	8.108	34.083	198.4	26.538	27.450	8.088	26.541	31.045	35.448	39.754	.4299	1.8	485.0	0.1096
213.1	8.000	34.097	211.4	26.565	27.537	7.979	26.568	31.074	35.480	39.787	.4497	4.7	484.8	0.1046
230.6	7.820	34.104	228.8	26.597	27.650	7.797	26.600	31.110	35.520	39.832	.4756	3.8	484.5	0.0832
346.2	7.000	34.197	343.4	26.786	28.370	6.968	26.790	31.319	35.747	40.076	.6355	0.8	483.3	0.0399
353.9	6.872	34.187	351.0	26.795	28.416	6.839	26.800	31.332	35.764	40.095	.6455	1.7	483.0	0.0145
370.7	6.694	34.200	367.6	26.829	28.528	6.660	26.834	31.371	35.806	40.142	.6667	6.2	482.5	0.0006

400.0	6.657	34.226	396.7	26.855	28.688	6.621	26.860	31.398	35.833	40.169	.7035	3.2	483.0	0.0164
475.3	6.000	34.249	471.3	26.959	29.141	5.959	26.964	31.517	35.969	40.321	.7934	5.0	481.6	-0.0506
506.4	5.756	34.256	502.1	26.995	29.323	5.713	27.000	31.559	36.017	40.374	.8285	2.2	481.1	-0.0758
600.0	5.204	34.309	594.7	27.103	29.866	5.155	27.109	31.681	36.152	40.522	.9274	0.4	480.5	-0.1002
705.6	5.000	34.372	699.2	27.177	30.425	4.943	27.184	31.761	36.236	40.611	.0315	2.3	481.5	-0.0741
735.1	4.850	34.371	728.4	27.193	30.579	4.791	27.200	31.781	36.260	40.638	.0595	4.0	481.4	-0.0919
787.7	4.618	34.400	780.4	27.242	30.872	4.556	27.249	31.836	36.321	40.705	.1078	2.7	481.3	-0.0948
800.0	4.586	34.404	792.6	27.249	30.935	4.523	27.256	31.844	36.329	40.714	.1189	2.5	481.4	-0.0951
1000.0	4.061	34.447	990.3	27.339	31.950	3.985	27.348	31.949	36.448	40.845	.2889	0.4	482.6	-0.1169
1020.8	4.000	34.451	1010.8	27.349	32.055	3.923	27.357	31.960	36.460	40.859	.3058	0.6	482.7	-0.1200
1116.8	3.764	34.474	1105.6	27.391	32.541	3.681	27.400	32.009	36.515	40.919	.3823	3.4	483.3	-0.1257
1119.8	3.758	34.473	1108.6	27.391	32.555	3.674	27.400	32.009	36.515	40.920	.3846	1.9	483.4	-0.1271
1221.9	3.543	34.490	1209.4	27.426	33.061	3.453	27.435	32.050	36.562	40.972	.4614	0.4	484.2	-0.1348

STATION: 10

1/18/90 1418 GMT LAT: 36 20.1 LON:122 25.8 AIR:11.1 C DEWPT: 0.0 C WD DIR: 20 WD SPD: 4.6

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POT0	SIG0	SIG1	SIG2	SIG3	D	N*Q	SV	SPICE
0.0	13.060	33.325	0.0	25.083	25.084	13.060	25.083	29.487	33.794	38.005	.0000	0.0	498.4	0.3877
10.0	13.051	33.325	9.9	25.086	25.131	13.050	25.086	29.490	33.797	38.008	.0287	5.9	498.5	0.3859
20.0	13.056	33.324	19.9	25.084	25.174	13.053	25.084	29.488	33.795	38.006	.0574	0.3	498.7	0.3862
40.0	13.065	33.324	39.7	25.082	25.261	13.060	25.083	29.487	33.793	38.005	.1149	0.9	499.1	0.3877
51.6	13.000	33.319	51.2	25.090	25.322	12.993	25.092	29.497	33.805	38.017	.1485	12.0	499.1	0.3706
54.1	12.350	33.295	53.7	25.198	25.442	12.343	25.200	29.618	33.938	38.163	.1553	139.0	496.9	0.2218
55.0	12.000	33.286	54.6	25.256	25.505	11.993	25.258	29.684	34.011	38.242	.1577	171.7	495.7	0.1468
57.4	11.123	33.261	57.0	25.399	25.659	11.116	25.400	29.844	34.189	38.438	.1643	167.3	492.7	-0.0393
58.5	11.097	33.254	58.1	25.399	25.664	11.090	25.400	29.844	34.190	38.439	.1670	72.0	492.6	-0.0492
60.0	11.146	33.256	59.6	25.392	25.663	11.139	25.393	29.836	34.180	38.429	.1709	18.8	492.8	-0.0387
61.6	11.208	33.280	61.1	25.399	25.678	11.201	25.400	29.842	34.185	38.432	.1752	14.4	493.0	-0.0083
65.0	11.000	33.314	64.5	25.463	25.756	10.992	25.464	29.910	34.257	38.507	.1837	86.8	492.4	-0.0193
70.0	10.000	33.322	69.5	25.642	25.960	9.992	25.643	30.110	34.478	38.749	.1959	128.9	489.0	-0.1900
79.6	9.764	33.400	79.0	25.742	26.104	9.755	25.744	30.215	34.587	38.862	.2183	34.0	488.3	-0.1683
80.0	9.777	33.411	79.4	25.748	26.112	9.768	25.750	30.221	34.592	38.868	.2191	38.0	488.4	-0.1573
84.0	9.762	33.472	83.4	25.798	26.180	9.752	25.800	30.271	34.643	38.918	.2280	28.9	488.5	-0.1114
100.0	9.430	33.564	99.2	25.924	26.379	9.419	25.926	30.404	34.783	39.063	.2621	22.2	487.7	-0.0939
102.0	9.365	33.600	101.2	25.963	26.427	9.354	25.965	30.444	34.823	39.105	.2664	60.5	487.5	-0.0757
103.6	9.319	33.635	102.8	25.998	26.469	9.308	26.000	30.480	34.860	39.142	.2695	71.9	487.4	-0.0554
120.8	9.204	33.800	119.9	26.146	26.695	9.191	26.148	30.629	35.010	39.295	.3030	33.0	487.5	0.0567
125.9	9.186	33.863	124.9	26.198	26.770	9.172	26.200	30.681	35.062	39.346	.3125	20.7	487.6	0.1035
133.2	9.000	33.909	132.2	26.264	26.870	8.986	26.266	30.751	35.136	39.424	.3257	33.6	487.0	0.1101
150.0	8.719	33.981	148.8	26.364	27.047	8.703	26.366	30.857	35.248	39.540	.3546	9.9	486.4	0.1226
155.8	8.640	34.000	154.6	26.391	27.101	8.624	26.394	30.886	35.278	39.573	.3643	20.4	486.2	0.1252
157.0	8.624	34.005	155.8	26.397	27.112	8.608	26.400	30.893	35.285	39.580	.3662	17.9	486.1	0.1264
199.6	8.000	34.084	198.0	26.554	27.465	7.980	26.557	31.063	35.469	39.777	.4333	6.3	484.6	0.0940
200.0	7.999	34.084	198.4	26.554	27.467	7.979	26.557	31.063	35.469	39.777	.4339	5.1	484.6	0.0937
333.7	7.000	34.177	331.0	26.770	28.298	6.969	26.774	31.303	35.732	40.061	.6224	2.1	483.1	0.0240
358.6	6.812	34.177	355.6	26.795	28.438	6.779	26.800	31.334	35.766	40.100	.6548	7.3	482.8	-0.0019
378.1	6.677	34.200	375.0	26.832	28.565	6.643	26.837	31.374	35.809	40.146	.6798	3.9	482.6	-0.0016
400.0	6.561	34.215	396.7	26.859	28.693	6.525	26.864	31.404	35.842	40.182	.7070	0.7	482.5	-0.0050
462.1	6.000	34.203	458.2	26.922	29.045	5.960	26.927	31.481	35.932	40.284	.7818	0.6	481.3	-0.0876
462.7	5.972	34.200	458.8	26.923	29.049	5.932	26.928	31.483	35.935	40.288	.7825	3.1	481.2	-0.0930
479.2	5.761	34.200	475.1	26.950	29.153	5.720	26.955	31.514	35.971	40.329	.8017	7.9	480.7	-0.1194

509.0	5.852	34.271	504.7	26.995	29.333	5.808	27.000	31.557	36.011	40.366	.8356	4.6	481.6	-0.0524
600.0	5.186	34.320	594.7	27.114	29.877	5.137	27.120	31.693	36.164	40.534	.9316	6.4	480.5	-0.0935
698.8	5.000	34.377	692.5	27.181	30.398	4.943	27.187	31.764	36.240	40.614	.0281	2.4	481.4	-0.0701
719.7	4.844	34.370	713.2	27.193	30.508	4.787	27.200	31.781	36.260	40.639	.0479	2.8	481.1	-0.0933
800.0	4.563	34.397	792.6	27.246	30.933	4.500	27.253	31.842	36.327	40.712	.1216	1.8	481.3	-0.1029
807.7	4.536	34.400	800.2	27.251	30.974	4.473	27.258	31.847	36.334	40.720	.1285	5.2	481.3	-0.1037
970.2	4.000	34.451	960.8	27.349	31.825	3.927	27.357	31.960	36.459	40.858	.2656	3.2	481.9	-0.1197
1000.0	3.898	34.460	990.3	27.366	31.981	3.823	27.374	31.980	36.482	40.883	.2892	2.3	481.9	-0.1232
1062.6	3.723	34.470	1052.1	27.393	32.296	3.644	27.400	32.011	36.517	40.923	.3376	3.8	482.3	-0.1329
1391.3	3.000	34.534	1376.5	27.512	33.935	2.901	27.521	32.151	36.677	41.101	.5672	2.1	484.7	-0.1511
1500.0	2.853	34.547	1483.7	27.536	34.458	2.747	27.546	32.179	36.709	41.137	.6368	0.1	485.9	-0.1536
1644.0	2.501	34.576	1625.5	27.590	35.179	2.387	27.600	32.243	36.782	41.219	.7249	1.6	486.9	-0.1611
1692.0	2.441	34.580	1672.8	27.599	35.407	2.324	27.608	32.254	36.794	41.233	.7524	0.4	487.4	-0.1629

STATION: 11

1/18/90 1936 GMT LAT: 36 20.1 LON:122 28.8 AIR:11.4 C DEWPT: 0.0 C WD DIR: 348 WD SPD: 2.8

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POT0	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	12.847	33.206	0.0	25.034	25.034	12.847	25.034	29.443	33.754	37.970	.0000	0.0	497.5	0.2500
10.0	12.825	33.204	9.9	25.036	25.082	12.824	25.036	29.446	33.757	37.974	.0292	4.5	497.6	0.2439
20.0	12.824	33.209	19.9	25.040	25.130	12.821	25.041	29.450	33.762	37.979	.0583	4.4	497.8	0.2474
40.0	12.162	33.214	39.7	25.172	25.352	12.157	25.173	29.595	33.920	38.149	.1160	56.4	495.9	0.1204
40.7	12.000	33.208	40.4	25.197	25.381	11.995	25.198	29.624	33.952	38.184	.1180	78.0	495.4	0.0842
40.8	11.990	33.207	40.5	25.199	25.382	11.985	25.200	29.626	33.954	38.186	.1181	79.4	495.3	0.0820
41.5	11.810	33.200	41.2	25.227	25.414	11.805	25.228	29.658	33.989	38.225	.1202	105.6	494.7	0.0413
43.1	11.000	33.176	42.8	25.353	25.548	10.995	25.354	29.801	34.148	38.401	.1243	221.4	491.9	-0.1275
43.5	10.703	33.167	43.2	25.399	25.597	10.698	25.400	29.853	34.207	38.465	.1256	263.7	490.8	-0.1887
45.7	10.000	33.132	45.4	25.493	25.701	9.995	25.494	29.962	34.331	38.604	.1312	124.9	488.3	-0.3423
56.7	9.603	33.183	56.3	25.599	25.857	9.597	25.600	30.077	34.454	38.734	.1580	40.7	487.1	-0.3686
57.6	9.593	33.200	57.2	25.614	25.876	9.587	25.615	30.092	34.469	38.749	.1601	47.7	487.1	-0.3570
60.0	9.530	33.228	59.6	25.646	25.919	9.523	25.647	30.125	34.504	38.785	.1658	41.1	486.9	-0.3451
68.5	9.477	33.400	68.0	25.789	26.101	9.470	25.790	30.268	34.646	38.927	.1852	68.4	487.1	-0.2165
69.0	9.470	33.411	68.5	25.799	26.113	9.462	25.800	30.278	34.656	38.937	.1862	68.0	487.1	-0.2091
78.0	9.533	33.600	77.4	25.936	26.291	9.524	25.938	30.413	34.789	39.067	.2053	10.4	487.7	-0.0479
80.0	9.506	33.613	79.4	25.951	26.314	9.497	25.952	30.428	34.804	39.083	.2094	23.1	487.7	-0.0417
81.7	9.407	33.653	81.1	25.998	26.370	9.398	26.000	30.477	34.855	39.135	.2130	78.1	487.3	-0.0266
100.0	9.210	33.783	99.2	26.131	26.587	9.199	26.133	30.614	34.995	39.279	.2484	5.6	487.1	0.0445
104.3	9.154	33.800	103.5	26.153	26.628	9.143	26.155	30.638	35.020	39.305	.2564	21.4	487.0	0.0487
107.1	9.025	33.830	106.3	26.198	26.685	9.014	26.200	30.685	35.070	39.357	.2615	48.7	486.6	0.0517
107.7	9.000	33.836	106.9	26.206	26.696	8.989	26.208	30.693	35.079	39.367	.2626	45.9	486.5	0.0524
150.0	8.740	33.998	148.8	26.374	27.057	8.724	26.377	30.867	35.257	39.549	.3362	9.8	486.5	0.1392
153.0	8.740	34.000	151.8	26.375	27.072	8.724	26.378	30.868	35.258	39.550	.3412	1.7	486.5	0.1410
164.1	8.668	34.013	162.8	26.397	27.144	8.651	26.400	30.891	35.283	39.577	.3596	3.1	486.4	0.1399
200.0	8.197	34.078	198.4	26.521	27.432	8.177	26.524	31.025	35.426	39.730	.4166	13.1	485.3	0.1188
216.5	8.000	34.082	214.8	26.553	27.541	7.978	26.556	31.062	35.468	39.776	.4418	4.7	484.9	0.0922
234.1	7.923	34.124	232.3	26.597	27.665	7.900	26.600	31.108	35.516	39.825	.4680	10.3	484.9	0.1141
317.4	7.000	34.129	314.8	26.732	28.185	6.970	26.736	31.266	35.694	40.024	.5847	4.1	482.8	-0.0141
400.0	6.443	34.200	396.7	26.863	28.698	6.407	26.867	31.409	35.851	40.192	.6918	24.8	482.1	-0.0329
406.3	6.395	34.200	402.9	26.869	28.733	6.359	26.874	31.418	35.860	40.203	.6995	11.8	482.0	-0.0389
424.8	6.000	34.147	421.3	26.878	28.830	5.963	26.882	31.436	35.889	40.241	.7222	2.7	480.6	-0.1316
465.5	5.851	34.200	461.6	26.939	29.078	5.811	26.944	31.501	35.957	40.312	.7707	9.3	480.8	-0.1082
514.1	5.818	34.265	509.7	26.994	29.356	5.774	27.000	31.557	36.013	40.369	.8263	6.2	481.5	-0.0610

600.0	5.309	34.307	594.7	27.089	29.850	5.260	27.095	31.665	36.133	40.501	.9187	1.8	481.0	-0.0894
685.3	5.000	34.358	679.2	27.166	30.321	4.945	27.172	31.750	36.225	40.600	.0035	0.1	481.1	-0.0852
712.2	4.715	34.352	705.8	27.193	30.476	4.659	27.200	31.785	36.267	40.648	.0290	1.5	480.4	-0.1219
769.7	4.500	34.372	762.6	27.233	30.783	4.440	27.240	31.830	36.318	40.704	.0816	2.0	480.5	-0.1293
772.2	4.500	34.373	765.1	27.234	30.795	4.440	27.240	31.831	36.319	40.705	.0839	0.0	480.6	-0.1288
800.0	4.507	34.399	792.6	27.254	30.941	4.445	27.260	31.851	36.338	40.725	.1087	1.4	481.1	-0.1076
823.6	4.384	34.400	817.9	27.268	31.075	4.320	27.275	31.868	36.358	40.748	.1313	6.9	481.0	-0.1201
951.4	4.000	34.446	942.3	27.345	31.735	3.928	27.352	31.955	36.456	40.855	.2363	5.5	481.5	-0.1237
1000.0	3.790	34.457	990.3	27.375	31.992	3.716	27.383	31.991	36.497	40.901	.2746	2.7	481.5	-0.1365
1048.4	3.732	34.471	1038.1	27.392	32.231	3.655	27.400	32.010	36.517	40.922	.3118	0.4	482.1	-0.1312
1365.0	3.000	34.532	1350.6	27.511	33.814	2.903	27.520	32.149	36.675	41.099	.5357	4.4	484.3	-0.1526
1500.0	2.768	34.555	1483.7	27.550	34.475	2.663	27.559	32.196	36.728	41.157	.6211	0.2	485.6	-0.1548
1655.7	2.502	34.576	1637.1	27.590	35.232	2.387	27.600	32.243	36.783	41.219	.7146	3.4	487.1	-0.1610
1862.4	2.251	34.596	1840.5	27.627	36.216	2.122	27.638	32.288	36.834	41.278	.8293	1.2	489.5	-0.1659

STATION: 12

1/19/90 218 GMT LAT: 36 20.0 LON:122 33.0 AIR:12.2 C DEWPT: 0.0 C WD DIR: 270 WD SPD: 5.3

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POT0	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	12.850	33.191	0.0	25.021	25.022	12.850	25.021	29.430	33.742	37.958	.0000	0.0	497.5	0.2387
10.0	12.850	33.187	9.9	25.018	25.063	12.849	25.019	29.428	33.739	37.955	.0293	5.2	497.7	0.2357
12.3	12.850	33.163	12.2	24.999	25.055	12.848	25.000	29.409	33.720	37.936	.0360	26.5	497.7	0.2161
15.3	12.840	33.161	15.2	25.000	25.069	12.838	25.000	29.410	33.721	37.938	.0448	19.7	497.7	0.2125
20.0	12.792	33.188	19.9	25.030	25.120	12.789	25.031	29.440	33.753	37.970	.0587	3.3	497.7	0.2245
40.0	12.743	33.182	39.7	25.035	25.215	12.738	25.036	29.447	33.761	37.979	.1172	0.7	497.8	0.2098
48.9	12.407	33.200	48.5	25.114	25.334	12.401	25.116	29.533	33.853	38.077	.1431	111.3	496.9	0.1576
50.8	12.062	33.225	50.4	25.199	25.427	12.055	25.200	29.624	33.951	38.182	.1484	142.3	495.8	0.1095
51.2	12.000	33.230	50.8	25.214	25.444	11.993	25.215	29.641	33.969	38.201	.1495	136.4	495.6	0.1015
55.2	11.249	33.289	54.8	25.398	25.648	11.242	25.400	29.841	34.183	38.429	.1604	160.7	493.0	0.0069
56.3	11.000	33.305	55.9	25.455	25.710	10.993	25.457	29.902	34.250	38.500	.1631	167.1	492.2	-0.0265
60.0	10.475	33.351	59.6	25.584	25.855	10.468	25.585	30.041	34.399	38.660	.1721	87.7	490.5	-0.0843
60.3	10.415	33.357	59.9	25.599	25.871	10.408	25.600	30.057	34.417	38.679	.1727	97.5	490.3	-0.0898
62.1	10.003	33.400	61.6	25.702	25.984	9.996	25.703	30.170	34.537	38.807	.1770	164.4	488.9	-0.1275
66.6	9.782	33.477	66.1	25.799	26.101	9.775	25.800	30.271	34.642	38.916	.1871	36.2	488.3	-0.1039
80.0	9.413	33.543	79.4	25.911	26.275	9.404	25.912	30.391	34.770	39.051	.2157	12.4	487.2	-0.1131
83.1	9.432	33.600	82.5	25.953	26.331	9.423	25.954	30.431	34.809	39.090	.2222	57.8	487.4	-0.0647
85.5	9.466	33.666	84.9	25.999	26.387	9.457	26.000	30.477	34.853	39.133	.2270	55.1	487.7	-0.0064
100.0	9.396	33.709	99.2	26.044	26.499	9.385	26.045	30.523	34.901	39.181	.2558	4.2	487.7	0.0161
110.6	9.237	33.800	109.8	26.141	26.644	9.225	26.142	30.622	35.004	39.286	.2765	69.3	487.4	0.0622
113.9	9.167	33.859	113.0	26.197	26.716	9.155	26.200	30.681	35.063	39.347	.2827	52.2	487.3	0.0973
122.8	9.000	33.925	121.9	26.276	26.835	8.987	26.278	30.763	35.148	39.435	.2985	17.3	486.9	0.1228
137.1	8.885	34.000	136.0	26.353	26.977	8.870	26.355	30.842	35.229	39.518	.3230	19.6	486.8	0.1639
147.2	8.691	34.018	146.1	26.397	27.068	8.676	26.400	30.891	35.282	39.575	.3399	18.4	486.2	0.1475
150.0	8.653	34.030	148.8	26.413	27.096	8.637	26.415	30.906	35.299	39.593	.3445	14.5	486.2	0.1512
200.0	8.062	34.081	198.4	26.543	27.455	8.042	26.545	31.051	35.455	39.761	.4226	2.3	484.8	0.1009
213.5	8.000	34.108	211.8	26.573	27.547	7.979	26.576	31.083	35.488	39.796	.4429	3.9	484.9	0.1130
223.6	7.904	34.120	221.8	26.597	27.617	7.882	26.600	31.108	35.516	39.825	.4578	6.3	484.7	0.1082
306.2	7.000	34.128	303.7	26.732	28.134	6.972	26.735	31.265	35.694	40.023	.5734	5.5	482.6	-0.0147
354.3	6.581	34.137	351.4	26.795	28.420	6.549	26.800	31.340	35.777	40.116	.6368	7.1	481.8	-0.0640
400.0	6.025	34.117	396.7	26.851	28.689	5.991	26.855	31.409	35.861	40.213	.6948	11.5	480.3	-0.1523
402.8	6.000	34.117	399.4	26.854	28.706	5.965	26.859	31.413	35.865	40.217	.6982	5.6	480.2	-0.1551
496.4	5.595	34.200	492.2	26.970	29.254	5.553	26.975	31.538	36.000	40.362	.8094	2.3	480.2	-0.1397

508.0	5.523	34.200	503.7	26.979	29.316	5.481	26.984	31.549	36.012	40.375	.8225	4.8	480.1	-0.1483
517.3	5.629	34.236	512.9	26.994	29.373	5.585	27.000	31.563	36.023	40.384	.8330	6.1	480.8	-0.1073
600.0	5.223	34.288	594.7	27.084	29.847	5.174	2 [illegible]0	31.662	36.132	40.502	.9218	2.7	480.6	-0.1145
662.7	5.000	34.333	656.8	27.146	30.199	4.947	2 [illegible]2	31.730	36.205	40.580	.9851	4.1	480.8	-0.1044
726.7	4.738	34.356	720.1	27.194	30.543	4.681	27.200	31.784	36.266	40.647	.0464	3.0	480.8	-0.1161
800.0	4.347	34.391	792.6	27.265	30.955	4.286	27.271	31.865	36.357	40.747	.1126	2.1	480.4	-0.1311
814.0	4.338	34.400	806.4	27.273	31.027	4.276	27.280	31.874	36.365	40.755	.1248	5.9	480.6	-0.1250
923.4	4.000	34.448	914.6	27.347	31.608	3.931	27.354	31.957	36.456	40.855	.2155	3.6	481.1	-0.1226
1000.0	3.782	34.462	990.3	27.380	31.997	3.708	27.387	31.996	36.501	40.906	.2759	3.3	481.5	-0.1332
1037.8	3.710	34.469	1027.6	27.393	32.184	3.634	27.400	32.011	36.519	40.924	.3048	0.0	481.8	-0.1350
1134.2	3.500	34.491	1122.8	27.431	32.668	3.417	27.439	32.055	36.568	40.979	.3761	1.7	482.5	-0.1381
1377.9	3.000	34.532	1363.3	27.511	33.873	2.902	27.520	32.150	36.675	41.099	.5439	0.0	484.5	-0.1524
1500.0	2.773	34.552	1483.7	27.548	34.472	2.668	27.556	32.193	36.725	41.155	.6220	1.1	485.6	-0.1567
1685.9	2.491	34.575	1666.8	27.590	35.369	2.374	27.600	32.244	36.783	41.221	.7333	1.6	487.5	-0.1627
1693.9	2.493	34.575	1674.7	27.590	35.405	2.375	27.600	32.244	36.783	41.220	.7379	1.2	487.7	-0.1625
1703.9	2.490	34.575	1684.5	27.591	35.451	2.371	27.600	32.244	36.784	41.221	.7437	1.6	487.8	-0.1628
1890.0	2.178	34.600	1867.7	27.636	36.353	2.048	27.647	32.300	36.848	41.293	.8472	1.9	489.6	-0.1686
1900.0	2.163	34.600	1877.5	27.638	36.400	2.033	27.648	32.301	36.850	41.296	.8525	0.4	489.7	-0.1698
2000.0	2.044	34.616	1975.9	27.660	36.880	1.907	27.671	32.327	36.879	41.328	.9049	0.0	490.9	-0.1666
2088.8	2.000	34.621	2063.2	27.667	37.290	1.856	27.678	32.336	36.890	41.340	.9500	1.1	492.2	-0.1661
2266.2	1.893	34.635	2237.5	27.687	38.113	1.736	27.699	32.360	36.917	41.370	.0377	0.4	494.8	-0.1633

STATION: 13

1/19/90 418 GMT LAT: 36 20.1 LON:122 33.8 AIR:11.5 C DEWPT: 0.0 C WD DIR: 311 WD SPD: 4.5

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POTO	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	12.775	33.183	0.0	25.030	25.030	12.775	25.030	29.440	33.753	37.971	.0000	0.0	497.3	0.2172
10.0	12.779	33.185	9.9	25.031	25.076	12.778	25.031	29.441	33.754	37.971	.0292	0.9	497.4	0.2194
20.0	12.749	33.183	19.9	25.035	25.125	12.746	25.035	29.446	33.759	37.978	.0584	3.3	497.5	0.2120
40.0	12.675	33.190	39.7	25.055	25.235	12.670	25.056	29.469	33.783	38.002	.1168	16.3	497.6	0.2027
41.0	12.576	33.200	40.7	25.081	25.266	12.571	25.083	29.497	33.814	38.035	.1196	49.3	497.3	0.1908
44.4	12.135	33.244	44.1	25.200	25.399	12.129	25.200	29.623	33.949	38.178	.1292	131.5	495.9	0.1389
44.7	12.000	33.248	44.4	25.229	25.430	11.994	25.229	29.655	33.983	38.215	.1302	167.1	495.4	0.1165
47.5	11.220	33.282	47.1	25.399	25.613	11.214	25.400	29.841	34.184	38.431	.1375	179.0	492.8	-0.0041
50.4	11.000	33.317	50.0	25.465	25.693	10.994	25.466	29.912	34.259	38.510	.1449	71.0	492.2	-0.0167
54.4	10.431	33.361	54.0	25.599	25.846	10.425	25.600	30.057	34.416	38.677	.1546	114.6	490.3	-0.0839
56.9	10.071	33.400	56.5	25.691	25.949	10.064	25.692	30.157	34.523	38.791	.1606	95.1	489.0	-0.1160
57.9	10.000	33.418	57.5	25.717	25.980	9.993	25.718	30.184	34.551	38.821	.1630	67.8	488.8	-0.1136
60.0	9.723	33.454	59.6	25.790	26.063	9.716	25.792	30.264	34.637	38.912	.1676	113.5	487.9	-0.1327
60.6	9.713	33.462	60.2	25.799	26.074	9.706	25.800	30.272	34.645	38.920	.1689	88.1	487.9	-0.1277
78.6	9.401	33.600	78.0	25.958	26.315	9.392	25.959	30.438	34.815	39.097	.2073	46.2	487.3	-0.0698
80.0	9.340	33.623	79.4	25.986	26.349	9.331	25.987	30.467	34.846	39.129	.2101	64.5	487.1	-0.0614
83.6	9.288	33.629	83.0	25.999	26.379	9.279	26.000	30.481	34.861	39.145	.2174	3.3	486.9	-0.0653
100.0	9.183	33.757	99.2	26.115	26.570	9.1[illegible]	26.117	30.599	34.981	39.266	.2498	28.4	487.0	0.0189
104.8	9.060	33.800	104.0	26.169	26.645	9.049	26.170	30.655	35.039	39.326	.2588	33.6	486.7	0.0335
107.5	9.075	33.840	106.7	26.198	26.687	9.064	26.200	30.683	35.067	39.353	.2638	35.4	486.8	0.0676
107.5	9.075	33.840	106.7	26.198	26.687	9.064	26.200	30.683	35.067	39.353	.2638	35.4	486.8	0.0676
119.1	9.000	33.926	118.2	26.277	26.819	8.987	26.279	30.763	35.148	39.436	.2845	18.9	486.8	0.1238
139.8	8.730	34.000	138.7	26.377	27.014	8.715	26.379	30.870	35.260	39.552	.3200	18.0	486.3	0.1394
143.6	8.689	34.018	142.5	26.398	27.052	8.674	26.400	30.891	35.282	39.576	.3262	15.1	486.2	0.1472
150.0	8.598	34.032	148.8	26.423	27.106	8.582	26.426	30.919	35.312	39.606	.3367	7.2	486.0	0.1441
200.0	8.034	34.083	198.4	26.548	27.461	8.014	26.551	31.057	35.462	39.769	.4145	3.4	484.7	0.0984

204.2	8.000	34.094	202.6	26.562	27.494	7.980	26.565	31.071	35.477	39.785	.4208	11.4	484.7	0.1018
217.2	7.856	34.111	215.5	26.597	27.588	7.835	26.600	31.109	35.519	39.829	.4400	7.9	484.4	0.0943
272.2	7.000	34.076	270.0	26.690	27.938	6.975	26.693	31.224	35.652	39.982	.5181	8.9	481.9	-0.0561
355.5	6.708	34.159	352.6	26.795	28.424	6.676	26.800	31.336	35.771	40.107	.6291	8.0	482.3	-0.0298
400.0	6.285	34.173	396.7	26.862	28.698	6.250	26.866	31.413	35.858	40.204	.6854	16.6	481.4	-0.0749
415.6	6.292	34.200	412.1	26.883	28.790	6.255	26.887	31.434	35.878	40.224	.7045	1.2	481.7	-0.0523
443.4	6.000	34.192	439.7	26.915	28.951	5.962	26.919	31.473	35.924	40.276	.7380	4.8	481.0	-0.0955
486.2	5.669	34.200	482.1	26.961	29.198	5.628	26.966	31.528	35.988	40.348	.7878	2.1	480.4	-0.1306
507.6	5.514	34.218	503.3	26.994	29.330	5.472	27.000	31.565	36.028	40.392	.8119	2.7	480.1	-0.1352
600.0	5.148	34.284	594.7	27.090	29.853	5.099	27.096	31.670	36.142	40.514	.9102	1.5	480.3	-0.1263
659.7	5.000	34.334	653.8	27.147	30.185	4.947	27.153	31.731	36.206	40.581	.9701	7.3	480.7	-0.1040
714.7	4.734	34.355	708.2	27.194	30.488	4.678	27.200	31.784	36.266	40.647	.0229	2.9	480.6	-0.1170
800.0	4.393	34.393	792.6	27.261	30.952	4.331	27.268	31.861	36.351	40.740	.1000	0.5	480.6	-0.1246
810.4	4.370	34.400	802.9	27.269	31.007	4.308	27.276	31.869	36.360	40.750	.1091	4.5	480.7	-0.1215
937.9	4.000	34.446	928.9	27.345	31.673	3.930	27.353	31.955	36.455	40.854	.2158	4.4	481.3	-0.1240
1000.0	3.756	34.458	990.3	27.379	31.996	3.682	27.387	31.996	36.502	40.907	.2647	4.1	481.3	-0.1391
1023.8	3.689	34.466	1013.8	27.393	32.120	3.614	27.400	32.011	36.519	40.925	.2829	2.4	481.5	-0.1394
1358.2	3.000	34.528	1343.9	27.508	33.780	2.904	27.516	32.146	36.672	41.096	.5191	1.8	484.2	-0.1554
1500.0	2.746	34.550	1483.7	27.548	34.474	2.641	27.558	32.194	36.727	41.157	.6094	0.7	485.5	-0.1606
1670.0	2.484	34.574	1651.1	27.590	35.298	2.368	27.600	32.244	36.784	41.221	.7108	2.5	487.2	-0.1641
1914.0	2.168	34.600	1891.3	27.637	36.463	2.036	27.648	32.301	36.849	41.295	.8457	2.0	490.0	-0.1694
2000.0	2.074	34.610	1975.9	27.653	36.871	1.936	27.664	32.319	36.871	41.319	.8909	0.4	491.0	-0.1690
2050.5	2.000	34.617	2025.5	27.664	37.114	1.859	27.675	32.333	36.886	41.336	.9167	0.4	491.6	-0.1690
2500.0	1.746	34.651	2467.0	27.711	39.193	1.570	27.725	32.390	36.951	41.409	.1341	0.0	498.1	-0.1618
2657.7	1.685	34.659	2621.6	27.722	39.912	1.496	27.736	32.404	36.967	41.427	.2068	1.6	500.5	-0.1601

STATION: 14

1/19/90 1506 GMT LAT: 36 20.1 LON:122 39.0 AIR:10.8 C DEWPT: 0.0 C WD DIR: 188 WD SPD: 2.0

P(DB)	TEMP	SAL	Z(M)	RHO	DENAN	POTO	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	12.748	33.185	0.0	25.037	25.037	12.748	25.037	29.448	33.761	37.979	.0000	0.0	1497.2	0.2133
10.0	12.741	33.186	9.9	25.039	25.084	12.740	25.039	29.450	33.764	37.982	.0292	1.2	1497.3	0.2127
20.0	12.747	33.186	19.9	25.038	25.127	12.744	25.038	29.449	33.762	37.980	.0083	0.5	1497.5	0.2139
40.0	12.741	33.187	39.7	25.040	25.220	12.735	25.041	29.452	33.766	37.984	.1167	3.4	1497.8	0.2136
47.7	12.681	33.200	47.3	25.061	25.276	12.675	25.062	29.475	33.789	38.008	.1391	18.3	1497.8	0.2119
50.4	12.159	33.248	50.0	25.198	25.425	12.153	25.200	29.622	33.946	38.175	.1466	175.9	1496.1	0.1477
50.8	12.000	33.256	50.4	25.234	25.463	11.994	25.236	29.661	33.989	38.220	.1479	202.9	1495.5	0.1230
54.0	11.313	33.305	53.6	25.399	25.643	11.306	25.400	29.840	34.181	38.425	.1564	139.6	1493.3	0.0309
56.0	11.000	33.318	55.6	25.465	25.719	10.993	25.466	29.913	34.259	38.510	.1614	107.2	1492.2	-0.0164
58.8	10.473	33.370	58.4	25.598	25.865	10.466	25.600	30.056	34.414	38.675	.1683	156.4	1490.5	-0.0694
59.6	10.329	33.400	59.2	25.646	25.917	10.322	25.648	30.107	34.468	38.731	.1702	183.1	1490.1	-0.0709
60.0	10.268	33.412	59.6	25.666	25.939	10.261	25.668	30.128	34.491	38.755	.1711	188.2	1489.9	-0.0720
63.7	10.000	33.452	63.2	25.743	26.032	9.993	25.745	30.211	34.578	38.848	.1795	60.8	1489.0	-0.0863
73.1	9.820	33.481	72.5	25.799	26.130	9.812	25.800	30.270	34.640	38.914	.2004	17.9	1488.5	-0.0914
80.0	9.539	33.580	79.4	25.920	26.283	9.530	25.921	30.396	34.772	39.050	.2152	17.5	1487.7	-0.0629
82.5	9.517	33.600	81.9	25.938	26.314	9.508	25.940	30.415	34.791	39.070	.2205	25.9	1487.7	-0.0506
89.7	9.429	33.657	89.0	25.998	26.406	9.419	26.000	30.476	34.854	39.134	.2351	12.5	1487.6	-0.0195
99.3	9.000	33.655	98.5	26.065	26.517	8.989	26.067	30.554	34.940	39.230	.2542	27.4	1486.2	-0.0911
100.0	8.968	33.661	99.2	26.075	26.530	8.957	26.077	30.564	34.951	39.241	.2556	29.9	1486.1	0.0917
104.5	9.000	33.752	103.7	26.141	26.616	8.989	26.143	30.628	35.014	39.303	.2642	38.7	1486.4	-0.0142
115.2	8.899	33.800	114.3	26.196	26.721	8.878	26.197	30.686	35.074	39.364	.2840	11.0	1486.2	0.0062
115.9	8.893	33.804	115.0	26.199	26.726	8.881	26.200	30.689	35.077	39.367	.2852	11.8	1486.2	0.0100

118.8	9.000	33.850	117.9	26.218	26.758	8.987	26.220	30.705	35.091	39.379	.2905	21.7	1486.7	0.0638
128.2	9.000	33.913	127.2	26.267	26.850	8.956	26.269	30.754	35.139	39.426	.3074	25.2	1486.9	0.1135
146.3	8.801	34.000	145.2	26.367	27.032	8.785	26.369	30.858	35.247	39.537	.3385	18. 3	1486.6	0.1505
150.0	8.784	34.017	148.8	26.382	27.065	8.868	26.385	30.873	35.263	39.554	.3447	14.5	1486.6	0.1613
154.0	8.748	34.029	152.8	26.397	27.098	7.382	26.400	30.889	35.279	39.571	.3513	13.0	1486.6	0.1651
200.0	8.080	34.078	198.4	26.537	27.450	8.060	26.540	31.045	35.449	39.756	.4240	7.1	1484.9	0.1011
206.8	8.000	34.082	205.2	26.552	27.496	7.979	26.555	31.062	35.468	39.776	.4342	3.5	1484.7	0.0921
228.0	7.871	34.114	226.2	26.597	27.638	7.848	26.600	31.109	35.518	39.828	.4658	9.7	1484.6	0.0986
333.6	7.125	34.200	330.9	26.771	28.297	7.094	26.775	31.302	35.727	40.053	.6125	3.5	1483.6	0.0596
337.6	7.091	34.200	334.8	26.776	28.320	7.059	26.780	31.307	35.733	40.060	.6178	3.5	1483.5	0.0548
345.3	7.053	34.200	342.5	26.781	28.361	7.021	26.785	31.313	35.740	40.068	.6279	2.8	1483.5	0.0496
349.6	7.000	34.200	346.7	26.788	28.389	6.967	26.793	31.322	35.750	40.079	.6335	3.6	1483.4	0.0423
349.7	6.999	34.200	346.8	26.788	28.389	6.966	26.793	31.322	35.750	40.079	.6336	3.4	1483.4	0.0421
353.4	6.927	34.196	350.5	26.795	28.413	6.894	26.800	31.331	35.761	40.091	.6384	7.4	1483.1	0.0294
400.0	6.347	34.182	396.7	26.861	28.697	6.311	26.866	31.411	35.854	40.198	.6971	3.9	1481.6	-0.0593
433.7	6.000	34.170	430.1	26.896	28.889	5.963	26.901	31.455	35.907	40.259	.7381	7.3	1480.8	-0.1133
442.7	6.033	34.200	439.1	26.916	28.949	5.995	26.921	31.473	35.924	40.275	.7488	4.2	1481.1	-0.0854
470.3	6.000	34.232	466.3	26.945	29.105	5.959	26.950	31.503	35.955	40.307	.7812	5.3	1481.5	-0.0644
514.3	5.639	34.237	549.9	26.995	29.359	5.595	27.000	31.562	36.022	40.382	.8312	14.4	1480.8	-0.1050
600.0	5.196	34.294	594.7	27.093	29.854	5.147	27.098	31.671	36.142	40.512	.9230	3.9	1480.5	-0.1129
671.6	5.000	34.342	665.6	27.153	30.246	4.946	27.159	31.737	36.212	40.587	.9949	2. 9	1480.9	-0.0978
713.8	4.667	34.346	707.3	27.194	30.485	4.611	27.200	31.786	36.270	40.653	.0353	2.9	1480.3	-0.1319
800.0	4.382	34.394	792.6	27.263	30.954	4.320	27.270	31.863	36.354	40.743	.1135	5.0	1480.6	-0.1250
819.4	4.322	34.400	811.8	27.274	31.055	4.2[illegible]	27.281	31.876	36.368	40.759	.1304	4.4	1480.7	-0.1267
945.6	4.000	34.446	936.5	27.345	31.708	3.929	27.353	31.956	36.456	40.854	.2361	4.6	1481.5	-0.1241
1000.0	3.847	34.455	990.3	27.368	31.983	3.773	27.375	31.982	36.486	40.889	.2791	1.8	1481.7	-0.1324
1041.1	3.704	34.468	1030.9	27.393	32.199	3.627	27.400	32.011	36.519	40.925	.3109	3.5	1481.8	-0.1361
1379.5	3.000	34.534	1364.9	27.513	33.881	2.902	27.522	32.151	36.677	41.101	.5482	3.5	1484.5	-0.1509
1500.0	2.734	34.550	1483.7	27.549	34.476	2.629	27.559	32.196	36.729	41.159	.6244	0.8	1485.4	-0.1617
1668.9	2.476	34.573	1650.0	27.590	35.293	2.361	27.600	32.244	36.784	41.222	.7253	2.1	1487.2	-0.1651
1878.0	2.181	34.600	1855.9	27.636	36.298	2.052	27.646	32.299	36.848	41.292	.8412	1.2	1489.4	-0.1684
2000.0	2.045	34.616	1975.9	27.660	36.880	1.908	27.671	32.327	36.879	41.328	.9049	0.8	1490.9	-0.1665
2056.1	2.000	34.622	2031.0	27.668	37.143	1.859	27.680	32.337	36.891	41.341	.9333	0.4	1491.7	-0.1653
2500.0	1.763	34.650	2467.0	27.709	39.190	1.587	27.722	32.387	36.948	41.405	.1481	0.1	1498.2	-0.1614
3000.0	1.625	34.666	2956.9	27.732	41.446	1.405	27.749	32.419	36.984	41.446	.3786	1.2	1506.1	-0.1591
3145.8	1.595	34.669	3099.6	27.737	42.098	1.362	27.754	32.425	36.992	41.455	.4448	0.0	1508.4	-0.1588

STATION: 15

1/19/90 2136 GMT LAT: 36 20.0 LON:122 42.3 AIR:11.7 C DEWPT: 0.0 C WD DIR: 136 WD SPD: 6.3

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POT0	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	12.801	33.198	0.0	25.037	25.037	12.801	25.037	29.446	33.758	37.976	.0000	0.0	497.4	0.2343
10.0	12.773	33.197	9.9	25.040	25.086	12.772	25.041	29.452	33.764	37.982	.0292	4.1	497.5	0.2276
20.0	12.748	33.195	19.9	25.044	25.135	12.745	25.045	29.456	33.769	37.987	.0583	0.9	497.5	0.2214
38.4	12.750	33.200	38.1	25.048	25.221	12.745	25.049	29.460	33.773	37.991	.1118	1.3	497.8	0.2256
40.0	12.741	33.212	39.7	25.059	25.239	12.736	25.060	29.472	33.785	38.002	.1164	19.5	497.9	0.2336
43.4	12.358	33.297	43.1	25.199	25.394	12.352	25.200	29.618	33.939	38.163	.1261	150.9	496.7	0.2251
46.7	12.000	33.315	46.4	25.280	25.491	11.994	25.281	29.707	34.034	38.265	.1351	65.1	495.6	0.1690
50.9	11.391	33.322	50.5	25.399	25.629	11.385	25.400	29.837	34.176	38.420	.1461	125.2	493.5	0.0600
53.9	11.000	33.332	53.5	25.476	25.721	10.994	25.478	29.923	34.270	38.520	.1538	57.1	492.2	-0.0052
57.5	10.397	33.353	57.1	25.599	25.860	10.390	25.600	30.059	34.417	38.680	.1627	166.8	490.2	-0.0963
60.0	10.009	33.400	59.6	25.701	25.973	10.002	25.702	30.168	34.535	38.805	.1685	126.6	488.9	-0.1269

60.3	10.000	33.405	59.9	25.707	25.980	9.993	25.708	30.174	34.542	38.812	.1693	111.4	488.9	-0.1240
69.4	9.523	33.422	68.9	25.798	26.114	9.515	25.800	30.276	34.654	38.933	.1897	33.1	487.3	-0.1918
78.4	9.532	33.600	77.8	25.936	26.292	9.523	25.938	30.413	34.789	39.067	.2089	69.2	487.7	-0.0481
80.0	9.493	33.627	79.4	25.964	26.328	9.484	25.966	30.441	34.818	39.096	.2122	53.7	487.7	-0.0327
82.0	9.433	33.659	81.4	25.998	26.371	9.424	26.000	30.477	34.854	39.134	.2164	53.3	487.5	-0.0176
100.0	9.017	33.775	99.2	26.156	26.611	9.006	26.157	30.643	35.028	39.316	.2511	22.2	486.4	0.0065
103.8	9.000	33.791	103.0	26.171	26.644	8.989	26.173	30.658	35.044	39.333	.2581	11.0	486.4	0.0163
107.6	8.958	33.800	106.8	26.185	26.675	8.947	26.187	30.673	35.060	39.349	.2651	13.0	486.3	0.0171
109.9	8.912	33.808	109.1	26.198	26.699	8.900	26.200	30.687	35.075	39.365	.2694	18.6	486.2	0.0159
146.5	8.266	33.935	145.4	26.398	27.067	8.251	26.400	30.901	35.302	39.605	.3322	7.9	484.6	0.0163
150.0	8.215	33.950	148.8	26.417	27.102	8.200	26.419	30.922	35.324	39.628	.3378	19.8	484.4	0.0206
155.0	8.354	34.000	153.8	26.435	27.142	8.338	26.438	30.937	35.334	39.636	.3458	4.9	485.1	0.0811
195.4	8.000	34.075	193.9	26.547	27.438	7.980	26.549	31.056	35.462	39.770	.4086	8.9	484.5	0.0867
200.0	7.907	34.088	198.4	26.571	27.485	7.887	26.574	31.083	35.491	39.801	.4155	18.1	484.3	0.0838
219.0	7.734	34.088	217.3	26.597	27.597	7.713	26.600	31.112	35.524	39.838	.4435	5.5	483.9	0.0582
266.6	7.709	34.200	264.6	26.688	27.905	7.683	26.692	31.204	35.616	39.929	.5112	5.4	484.7	0.1427
337.7	7.000	34.190	334.9	26.780	28.326	6.968	26.784	31.313	35.741	40.072	.6065	0.4	483.2	0.0341
346.4	6.764	34.169	343.6	26.796	28.383	6.732	26.800	31.335	35.769	40.103	.6178	6.4	482.4	-0.0145
385.1	6.000	34.128	381.9	26.863	28.633	5.967	26.867	31.421	35.873	40.225	.6665	7.9	479.9	-0.1467
400.0	5.875	34.126	396.7	26.877	28.718	5.841	26.882	31.439	35.894	40.250	.6847	0.8	479.7	-0.1635
448.4	5.895	34.200	444.6	26.933	28.994	5.857	26.938	31.494	35.948	40.303	.7422	4.1	480.7	-0.1027
505.7	5.682	34.245	501.4	26.995	29.320	5.639	27.000	31.562	36.021	40.380	.8074	5.8	480.6	-0.0936
600.0	5.162	34.299	594.7	27.101	29.863	5.113	27.106	31.680	36.151	40.522	.9078	2.2	480.4	-0.1129
635.7	5.000	34.321	630.1	27.137	30.065	4.949	27.142	31.720	36.196	40.571	.9436	2.7	480.3	-0.1142
781.8	4.500	34.385	774.6	27.243	30.848	4.439	27.250	31.840	36.328	40.714	.0809	2.9	480.7	-0.1194
800.0	4.408	34.391	792.6	27.258	30.948	4.346	27.265	31.857	36.347	40.736	.0971	4.3	480.7	-0.1244
820.8	4.325	34.400	813.2	27.274	31.060	4.262	27.281	31.875	36.367	40.758	.1151	2.3	480.7	-0.1264
937.8	4.000	34.442	928.8	27.342	31.669	3.930	27.349	31.952	36.452	40.851	.2128	1.2	481.3	-0.1271
1000.0	3.817	34.456	990.3	27.372	31.988	3.743	27.379	31.987	36.491	40.895	.2621	0.7	481.6	-0.1346
1038.9	3.704	34.467	1028.7	27.392	32.188	3.627	27.400	32.010	36.518	40.924	.2919	1.5	481.8	-0.1368
1380.1	3.000	34.534	1365.5	27.513	33.884	2.902	27.521	32.151	36.677	41.101	.5309	0.3	484.6	-0.1509
1500.0	2.769	34.547	1483.7	27.544	34.468	2.664	27.553	32.189	36.721	41.151	.6073	1.0	485.5	-0.1610
1670.0	2.488	34.575	1651.1	27.591	35.298	2.372	27.600	32.244	36.784	41.221	.7092	1.5	487.2	-0.1629
1870.1	2.216	34.600	1848.1	27.633	36.258	2.087	27.644	32.295	36.843	41.287	.8208	2.6	489.5	-0.1656
2000.0	2.074	34.614	1975.9	27.656	36.874	1.936	27.667	32.323	36.874	41.322	.8893	0.5	491.0	-0.1658
2098.1	2.000	34.622	2072.3	27.668	37.332	1.855	27.680	32.338	36.891	41.341	.9394	0.0	492.4	-0.1653
2500.0	1.778	34.648	2467.0	27.707	39.187	1.602	27.720	32.384	36.944	41.401	.1339	0.1	498.2	-0.1618
3000.0	1.636	34.665	2956.9	27.731	41.444	1.416	27.747	32.417	36.982	41.444	.3667	0.0	506.1	-0.1590
3161.8	1.589	34.670	3115.3	27.738	42.170	1.355	27.755	32.427	36.994	41.457	.4404	1.7	508.7	-0.1584

STATION: 16

1/20/90 200 GMT LAT: 36 20.1 LON:122 48.7 AIR:12.1 C DEWPT: 7.0 C WD DIR: 235 WD SPD: 10.0

P(DB)	TEMP	SAL	Z(M)	RHO	DENAN	POT0	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	12.784	33.231	0.0	25.065	25.066	12.784	25.065	29.475	33.787	38.004	.0000	0.0	497.4	0.2572
10.0	12.783	33.232	9.9	25.066	25.111	12.782	25.066	29.476	33.789	38.006	.0289	1.0	497.5	0.2574
20.0	12.800	33.235	19.9	25.065	25.155	12.797	25.066	29.476	33.787	38.004	.0577	1.3	497.8	0.2636
40.0	12.788	33.241	39.7	25.072	25.252	12.783	25.073	29.483	33.795	38.012	.1156	1.0	498.0	0.2660
49.8	12.229	33.265	49.4	25.199	25.422	12.223	25.200	29.620	33.943	38.170	.1436	90.7	496.4	0.1739
52.2	12.000	33.283	51.8	25.256	25.490	11.993	25.257	29.682	34.009	38.241	.1501	78.3	495.6	0.1438
55.0	11.000	33.308	54.6	25.457	25.705	10.993	25.458	29.904	34.251	38.502	.1576	270.0	492.3	-0.0232
57.1	10.323	33.337	56.7	25.599	25.858	10.316	25.600	30.060	34.421	38.685	.1627	216.2	489.9	-0.1216

60.0	10.014	33.361	59.6	25.670	25.942	10.007	25.671	30.137	34.505	38.775	.1695	54.3	488.9	-0.1563
60.2	10.000	33.362	59.8	25.673	25.946	9.993	25.674	30.1	34.508	38.779	.1699	53.3	488.8	-0.1586
64.2	9.768	33.400	63.7	25.741	26.033	9.761	25.742	30.2	34.586	38.861	.1792	61.7	488.1	-0.1678
69.2	9.815	33.484	68.7	25.799	26.113	9.807	25.800	30.27	34.640	38.914	.1902	27.6	488.4	-0.0927
80.0	9.523	33.599	79.4	25.937	26.301	9.514	25.939	30.414	34.790	39.068	.2133	52.9	487.7	-0.0504
80.1	9.522	33.600	79.5	25.938	26.302	9.513	25.940	30.415	34.791	39.069	.2135	50.8	487.7	-0.0497
90.0	9.424	33.657	89.3	25.998	26.407	9.414	26.000	30.477	34.854	39.135	.2337	25.2	487.6	-0.0210
100.0	9.211	33.731	99.2	26.091	26.546	9.200	26.093	30.574	34.956	39.240	.2534	32.1	487.1	0.0034
109.6	9.000	33.773	108.8	26.158	26.656	8.988	26.160	30.646	35.031	39.320	.2715	32.2	486.5	0.0027
115.4	8.854	33.796	114.5	26.198	26.723	8.842	26.200	30.689	35.078	39.369	.2824	17.0	486.1	-0.0030
117.6	8.803	33.800	116.7	26.209	26.745	8.791	26.211	30.701	35.091	39.383	.2862	16.5	485.9	-0.0075
146.2	8.270	33.936	145.1	26.398	27.065	8.255	26.400	30.901	35.302	39.605	.3354	14.8	484.6	0.0177
150.0	8.239	33.943	148.8	26.407	27.092	8.224	26.409	30.912	35.313	39.616	.3417	4.7	484.5	0.0182
170.4	8.000	33.991	169.1	26.481	27.260	7.983	26.484	30.991	35.398	39.705	.3744	10.6	484.0	0.0207
172.8	7.962	34.000	171.5	26.494	27.283	7.945	26.496	31.004	35.411	39.721	.3781	17.1	483.9	0.0220
194.5	8.000	34.067	193.0	26.541	27.429	7.981	26.544	31.050	35.456	39.764	.4115	9.5	484.5	0.0807
200.0	7.759	34.[illegible]	198.4	26.549	27.463	7.739	26.552	31.064	35.476	39.789	.4198	6.2	483.7	0.0174
220.0	7.397	34.027	218.3	26.597	27.603	7.376	26.600	31.121	35.541	39.862	.4494	3.2	482.6	-0.0385
265.7	7.06[illegible]	34.069	263.6	26.685	27.903	6.975	26.688	31.218	35.647	39.977	.5144	3.1	481.8	-0.0613
336.9	6.3[illegible]	34.095	334.1	26.796	28.343	6.293	26.800	31.346	35.791	40.136	.6095	6.4	480.4	-0.1313
400.0	6.051	34.146	396.7	26.871	28.709	6.016	26.875	31.427	35.879	40.230	.6884	1.5	480.4	-0.1260
406.1	6.000	34.144	402.7	26.876	28.743	5.965	26.880	31.434	35.886	40.238	.6957	1.0	480.4	-0.1338
443.7	5.856	34.200	440.0	26.938	28.978	5.818	26.943	31.500	35.955	40.310	.7404	8.1	480.4	-0.1076
600.0	5.242	34.305	594.7	27.095	29.858	5.193	27.101	31.673	36.143	40.512	.9098	1.9	480.7	-0.0987
660.2	5.000	34.336	654.3	27.148	30.189	4.947	27.154	31.732	36.208	40.582	.9700	1.3	480.7	-0.1027
714.7	4.627	34.340	708.2	27.194	30.490	4.571	27.200	31.787	36.272	40.656	.0220	3.7	480.1	-0.1406
800.0	4.457	34.394	792.6	27.255	30.944	4.395	27.262	31.853	36.342	40.729	.0996	1.4	480.9	-0.1170
835.9	4.338	34.400	828.1	27.273	31.128	4.274	27.280	31.874	36.365	40.756	.1310	2.2	481.0	-0.1250
938.9	4.000	34.436	929.9	27.338	31.670	3.929	27.345	31.948	36.448	40.846	.2175	2.9	481.3	-0.1318
1000.0	3.832	34.456	990.3	27.370	31.986	3.758	27.377	31.985	36.489	40.892	.2660	1.4	481.7	-0.1331
1030.5	3.702	34.468	1020.4	27.393	32.151	3.626	27.400	32.011	36.518	40.924	.2896	4.4	481.6	-0.1368
1378.6	3.000	34.537	1364.0	27.515	33.879	2.902	27.524	32.154	36.679	41.103	.5334	0.3	484.5	-0.1484
1500.0	2.716	34.554	1483.7	27.554	34.481	2.611	27.563	32.200	36.734	41.165	.6104	1.9	485.4	-0.1601
1626.0	2.496	34.575	1607.8	27.590	35.097	2.384	27.600	32.243	36.782	41.219	.6853	1.5	486.5	-0.1623
1630.0	2.485	34.575	1611.7	27.591	35.117	2.373	27.600	32.244	36.784	41.221	.6876	1.9	486.6	-0.1632
1858.0	2.174	34.600	1836.2	27.637	36.209	2.047	27.647	32.300	36.848	41.293	.8136	2.7	489.1	-0.1689
2000.0	2.034	34.616	1975.9	27.661	36.882	1.897	27.672	32.328	36.881	41.330	.8873	0.0	490.9	-0.1674
2060.2	2.000	34.623	2035.1	27.669	37.163	1.858	27.680	32.338	36.891	41.342	.9178	0.0	491.7	-0.1645
2500.0	1.774	34.650	2467.0	27.708	39.189	1.598	27.722	32.386	36.947	41.403	.1306	0.5	498.2	-0.1605
3000.0	1.635	34.666	2956.9	27.732	41.445	1.415	27.748	32.418	36.983	41.445	.3612	0.7	506.1	-0.1584
3100.3	1.618	34.668	3055.1	27.735	41.893	1.389	27.751	32.422	36.988	41.450	.4070	0.4	507.8	-0.1579

STATION: 17

1/20/90 1506 GMT LAT: 36 20.2 LON:122 55.5 AIR:12.0 C DEWPT: 6.7 C WD DIR: 51 WD SPD: 5.7

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POT0	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	12.693	33.215	0.0	25.071	25.071	12.693	25.071	29.482	33.796	38.015	.0000	0.0	497.0	0.2262
10.0	12.697	33.214	9.9	25.069	25.115	12.696	25.069	29.481	33.795	38.014	.0288	0.0	497.2	0.2262
20.0	12.699	33.215	19.9	25.069	25.160	12.696	25.070	29.482	33.796	38.015	.0577	0.5	497.4	0.2275
40.0	12.698	33.215	39.7	25.070	25.249	12.693	25.071	29.482	33.796	38.015	.1154	1.9	497.7	0.2272
47.2	12.075	33.200	46.9	25.177	25.389	12.069	25.178	29.602	33.928	38.160	.1361	111.0	495.7	0.0931
47.4	12.000	33.197	47.1	25.188	25.402	11.994	25.189	29.615	33.943	38.176	.1367	120.7	495.5	0.0761

P(DB)	TEMP	SAL	Z(M)	RHO	DENAN	POTO	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
47.6	11.932	33.194	47.3	25.199	25.413	11.926	25.200	29.627	33.956	38.190	.1373	129.5	495.2	0.0607
50.1	11.000	33.153	49.7	25.338	25.564	10.994	25.339	29.786	34.134	38.386	.1440	185.8	492.0	-0.1478
52.3	10.471	33.114	51.9	25.399	25.636	10.465	25.400	29.859	34.218	38.480	.1496	85.9	490.1	-0.2745
57.5	10.000	33.097	57.1	25.466	25.728	9.994	25.468	29.936	34.305	38.578	.1630	64.2	488.4	-0.3703
60.0	9.821	33.189	59.6	25.567	25.840	9.814	25.569	30.040	34.413	38.689	.1692	124.6	488.0	-0.3270
64.7	9.682	33.200	64.2	25.599	25.893	9.675	25.600	30.075	34.451	38.728	.1804	19.1	487.5	-0.3422
74.7	9.626	33.400	74.1	25.764	26.104	9.618	25.766	30.240	34.616	38.893	.2034	63.1	487.8	-0.1916
76.3	9.658	33.450	75.7	25.798	26.145	9.650	25.800	30.274	34.648	38.925	.2070	65.6	487.9	-0.1465
80.0	9.643	33.530	79.4	25.863	26.227	9.634	25.865	30.338	34.712	38.989	.2151	41.2	488.1	-0.0852
91.6	9.092	33.589	90.9	25.998	26.415	9.082	26.000	30.485	34.870	39.158	.2392	59.8	486.3	-0.1292
92.1	9.075	33.600	91.4	26.010	26.429	9.065	26.012	30.497	34.882	39.171	.2402	66.6	486.2	-0.1231
98.9	9.000	33.722	98.1	26.117	26.567	8.990	26.119	30.605	34.991	39.280	.2535	52.2	486.2	-0.0384
100.0	8.923	33.742	99.2	26.145	26.600	8.912	26.147	30.635	35.023	39.313	.2557	78.8	486.0	-0.0345
108.3	8.684	33.762	107.5	26.199	26.692	8.673	26.200	30.693	35.087	39.381	.2710	24.4	485.3	-0.0562
112.9	8.648	33.800	112.0	26.233	26.748	8.636	26.235	30.728	35.122	39.417	.2793	18.8	485.3	-0.0320
144.7	8.266	33.935	143.6	26.397	27.058	8.251	26.400	30.901	35.302	39.605	.3336	13.4	484.5	0.0164
150.0	8.195	33.952	148.8	26.421	27.106	8.180	26.423	30.926	35.329	39.633	.3423	12.3	484.4	0.0188
169.0	8.000	33.986	167.7	26.477	27.250	7.983	26.479	30.987	35.393	39.702	.3726	4.5	484.0	0.0168
176.9	7.907	34.000	175.5	26.502	27.310	7.889	26.505	31.013	35.422	39.732	.3848	10.0	483.7	0.0136
200.0	7.610	34.028	198.4	26.567	27.482	7.590	26.570	31.085	35.500	39.817	.4199	7.4	483.1	-0.0078
220.1	7.498	34.045	218.4	26.597	27.604	7.477	26.600	31.118	35.535	39.854	.4497	6.0	483.0	-0.0099
272.0	7.000	34.075	269.8	26.690	27.937	6.975	26.693	31.223	35.651	39.982	.5239	10.3	482.0	-0.0565
337.1	6.405	34.108	334.3	26.795	28.343	6.375	26.800	31.343	35.786	40.129	.6107	5.7	480.7	-0.1103
393.4	6.000	34.137	390.1	26.870	28.679	5.966	26.874	31.428	35.880	40.233	.6812	5.9	480.1	-0.1394
400.0	5.909	34.134	396.7	26.880	28.719	5.875	26.884	31.440	35.894	40.249	.6893	4.5	479.9	-0.1531
458.2	5.730	34.200	454.3	26.954	29.061	5.691	26.959	31.519	35.977	40.335	.7581	4.0	480.2	-0.1232
495.2	5.449	34.209	491.0	26.995	29.275	5.408	27.000	31.567	36.032	40.397	.8000	13.4	479.7	-0.1500
600.0	5.176	34.309	594.7	27.106	29.870	5.127	27.112	31.686	36.156	40.527	.9109	1.0	480.4	-0.1035
647.2	5.000	34.330	641.4	27.144	30.124	4.948	27.150	31.728	36.202	40.578	.9579	4.6	480.5	-0.1072
705.7	4.821	34.367	699.3	27.194	30.445	4.765	27.200	31.782	36.261	40.640	.0139	2.6	480.8	-0.0982
800.0	4.318	34.386	792.6	27.264	30.956	4.257	27.271	31.866	36.358	40.749	.0992	2.0	480.3	-0.1378
823.7	4.271	34.400	816.0	27.280	31.081	4.208	27.287	31.883	36.376	40.768	.1197	1.5	480.5	-0.1320
938.5	4.000	34.440	929.5	27.341	31.671	3.930	27.348	31.951	36.451	40.849	.2149	1.9	481.3	-0.1287
1000.0	3.834	34.453	990.3	27.367	31.984	3.760	27.375	31.982	36.487	40.890	.2637	1.3	481.7	-0.1350
1046.9	3.700	34.467	1036.6	27.392	32.225	3.623	27.400	32.011	36.518	40.924	.2999	2.1	481.9	-0.1371
1353.3	3.000	34.533	1339.0	27.512	33.761	2.904	27.521	32.150	36.676	41.100	.5144	1.7	484.1	-0.1515
1500.0	2.710	34.554	1483.7	27.554	34.482	2.606	27.564	32.201	36.735	41.166	.6065	0.4	485.3	-0.1606
1638.0	2.501	34.576	1619.6	27.590	35.152	2.388	27.600	32.243	36.782	41.219	.6885	1.5	486.8	-0.1611
1644.0	2.498	34.576	1625.5	27.590	35.179	2.384	27.600	32.244	36.783	41.220	.6920	2.6	486.9	-0.1613
1645.9	2.497	34.575	1627.4	27.590	35.187	2.383	27.600	32.243	36.782	41.219	.6931	1.2	486.9	-0.1622
1650.0	2.487	34.575	1631.4	27.591	35.207	2.373	27.600	32.244	36.783	41.221	.6955	2.1	486.9	-0.1630
1859.9	2.190	34.600	1838.1	27.635	36.215	2.063	27.646	32.298	36.846	41.291	.8118	1.6	489.2	-0.1676
2000.0	2.039	34.619	1975.9	27.663	36.883	1.902	27.674	32.330	36.882	41.331	.8847	1.5	490.9	-0.1646
2036.4	2.000	34.622	2011.7	27.668	37.054	1.861	27.679	32.337	36.890	41.340	.9031	1.6	491.3	-0.1653
2500.0	1.766	34.650	2467.0	27.709	39.189	1.590	27.722	32.387	36.948	41.405	.1268	0.0	498.2	-0.1611
3000.0	1.624	34.666	2956.9	27.733	41.447	1.404	27.749	32.419	36.984	41.446	.3569	1.3	506.1	-0.1589
3500.0	1.574	34.674	3445.8	27.743	43.662	1.306	27.762	32.435	37.003	41.467	.5842	0.7	514.4	-0.1562
3548.4	1.566	34.676	3493.1	27.745	43.877	1.293	27.764	32.438	37.006	41.471	.6061	1.2	515.2	-0.1554

STATION: 18

1/21/90 153 GMT LAT: 36 20.3 LON:123 2.2 AIR:12.4 C DEWPT: 6.9 C WD DIR: 338 WD SPD: 3.3

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POT0	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	12.834	33.282	0.0	25.095	25.095	12.834	25.095	29.504	33.815	38.031	.0000	0.0	497.6	0.3077
10.0	12.819	33.278	9.9	25.095	25.140	12.818	25.095	29.504	33.815	38.031	.0286	0.5	497.7	0.3019
20.0	12.722	33.273	19.9	25.110	25.200	12.719	25.110	29.521	33.834	38.052	.0571	2.9	497.5	0.2782
38.6	12.126	33.243	38.3	25.199	25.373	12.121	25.200	29.623	33.948	38.178	.1100	105.2	495.8	0.1377
38.9	12.000	33.234	38.6	25.217	25.392	11.995	25.217	29.643	33.971	38.203	.1107	126.9	495.3	0.1067
39.9	11.481	33.200	39.6	25.288	25.468	11.476	25.288	29.725	34.063	38.306	.1136	213.6	493.5	-0.0211
40.0	11.448	33.198	39.7	25.292	25.472	11.443	25.292	29.730	34.069	38.312	.1138	212.5	493.4	-0.0290
40.9	11.000	33.166	40.6	25.346	25.531	10.995	25.347	29.794	34.142	38.394	.1163	198.5	491.8	-0.1363
41.9	10.563	33.135	41.6	25.399	25.589	10.558	25.400	29.857	34.214	38.474	.1187	184.9	490.3	-0.2409
44.7	10.000	33.063	44.4	25.440	25.643	9.995	25.441	29.909	34.279	38.551	.1258	34.2	488.2	-0.3971
51.8	9.919	33.200	51.4	25.560	25.796	9.913	25.561	30.031	34.401	38.674	.1436	67.4	488.1	-0.3017
53.3	9.885	33.243	52.9	25.599	25.842	9.879	25.600	30.071	34.441	38.715	.1473	77.7	488.1	-0.2731
60.0	9.840	33.309	59.6	25.658	25.931	9.833	25.660	30.130	34.501	38.775	.1629	15.0	488.2	-0.2281
70.3	9.724	33.400	69.8	25.749	26.068	9.716	25.750	30.222	34.595	38.871	.1865	16.4	488.0	-0.1752
75.9	9.761	33.472	75.3	25.798	26.143	9.752	25.800	30.271	34.642	38.917	.1991	43.0	488.3	-0.1118
80.0	9.773	33.536	79.4	25.847	26.210	9.764	25.848	30.318	34.690	38.964	.2080	43.8	488.6	-0.0581
99.0	9.136	33.597	98.2	25.998	26.449	9.125	26.000	30.484	34.868	39.155	.2475	45.0	486.6	-0.1151
100.0	9.030	33.598	99.2	26.016	26.471	9.019	26.017	30.503	34.890	39.178	.2496	50.8	486.3	-0.1318
100.3	9.000	33.599	99.5	26.021	26.478	8.989	26.022	30.510	34.897	39.186	.2502	52.9	486.2	-0.1358
100.4	8.991	33.600	99.6	26.023	26.481	8.980	26.025	30.512	34.899	39.189	.2505	53.8	486.1	-0.1365
105.4	9.000	33.682	104.6	26.086	26.566	8.989	26.088	30.575	34.962	39.250	.2601	15.3	486.3	-0.0697
110.2	9.000	33.750	109.4	26.139	26.640	8.988	26.141	30.627	35.013	39.302	.2693	25.8	486.5	-0.0161
119.6	8.800	33.785	118.7	26.198	26.743	8.787	26.200	30.690	35.080	39.373	.2866	12.6	485.9	-0.0199
130.9	8.571	33.800	129.9	26.245	26.841	8.557	26.247	30.742	35.138	39.435	.3072	26.2	485.3	-0.0440
150.0	8.314	33.928	148.8	26.385	27.069	8.299	26.387	30.887	35.287	39.589	.3401	25.5	484.8	0.0177
152.9	8.278	33.937	151.7	26.398	27.095	8.262	26.400	30.901	35.302	39.604	.3450	17.8	484.7	0.0198
171.3	8.000	33.970	170.0	26.465	27.247	7.983	26.468	30.975	35.381	39.690	.3744	5.5	484.0	0.0039
186.6	7.796	34.000	185.1	26.518	27.371	7.778	26.521	31.032	35.443	39.756	.3982	6.0	483.5	-0.0027
200.0	7.696	34.014	198.4	26.543	27.458	7.677	26.546	31.060	35.473	39.788	.4186	2.7	483.4	-0.0065
222.5	7.418	34.031	220.7	26.597	27.615	7.397	26.600	31.120	35.540	39.861	.4521	6.5	482.7	-0.0326
263.0	7.000	34.060	260.9	26.678	27.883	6.976	26.681	31.211	35.641	39.971	.5099	6.8	481.8	-0.0683
400.0	6.189	34.191	396.7	26.889	28.726	6.154	26.894	31.443	35.890	40.237	.6866	2.1	481.0	-0.0725
414.0	6.115	34.200	410.6	26.906	28.807	6.079	26.910	31.461	35.910	40.259	.7034	3.5	481.0	-0.0750
423.0	6.000	34.197	419.5	26.918	28.862	5.963	26.923	31.476	35.927	40.280	.7140	5.8	480.7	-0.0917
483.5	5.458	34.200	479.4	26.987	29.213	5.418	26.992	31.559	36.023	40.388	.7835	2.4	479.5	-0.1562
493.6	5.450	34.209	489.4	26.995	29.268	5.409	27.000	31.567	36.032	40.397	.7947	3.9	479.6	-0.1500
600.0	5.156	34.313	594.7	27.112	29.875	5.107	27.118	31.691	36.163	40.534	.9074	2.4	480.3	-0.1028
652.7	5.000	34.352	646.9	27.162	30.167	4.947	27.168	31.745	36.220	40.595	.9596	3.7	480.6	-0.0898
696.0	4.783	34.363	689.7	27.195	30.402	4.728	27.200	31.784	36.264	40.644	.0007	3.9	480.5	-0.1060
759.7	4.550	34.400	752.7	27.250	30.752	4.491	27.256	31.845	36.331	40.716	.0587	3.7	480.6	-0.1022
800.0	4.394	34.409	792.6	27.274	30.964	4.332	27.281	31.874	36.364	40.753	.0939	1.4	480.6	-0.1120
937.8	4.000	34.445	928.8	27.344	31.672	3.930	27.351	31.955	36.454	40.853	.2089	1.4	481.3	-0.1246
1000.0	3.810	34.460	990.3	27.375	31.992	3.736	27.383	31.991	36.496	40.899	.2578	1.3	481.6	-0.1321
1041.8	3.705	34.468	1031.6	27.393	32.202	3.628	27.400	32.011	36.518	40.925	.2899	0.4	481.8	-0.1363
1369.1	3.000	34.535	1354.6	27.514	33.835	2.903	27.523	32.152	36.678	41.102	.5202	1.2	484.4	-0.1500
1500.0	2.728	34.558	1483.7	27.556	34.483	2.623	27.565	32.202	36.735	41.167	.6027	0.0	485.4	-0.1559
1634.0	2.468	34.572	1615.7	27.590	35.135	2.355	27.600	32.244	36.784	41.222	.6820	1.5	486.6	-0.1670

1840.0	2.182	34.600	1818.5	27.636	36.126	2.056	27.646	32.299	36.847	41.292	.7961	2.3	488.8	-0.1683
2000.0	2.021	34.617	1975.9	27.663	36.884	1.884	27.673	32.330	36.883	41.333	.8794	0.8	490.8	-0.1676
2023.1	2.000	34.620	1998.6	27.667	36.993	1.862	27.677	32.335	36.888	41.339	.8910	0.8	491.1	-0.1669
2500.0	1.764	34.652	2467.0	27.711	39.191	1.588	27.724	32.389	36.949	41.407	.1205	0.5	498.2	-0.1597
3000.0	1.628	34.666	2956.9	27.732	41.446	1.408	27.748	32.418	36.984	41.446	.3510	0.8	506.1	-0.1586
3307.5	1.560	34.674	3257.7	27.744	42.819	1.312	27.761	32.434	37.002	41.467	.4900	1.8	511.1	-0.1574

STATION: 19

1/21/90 623 GMT LAT: 36 15.7 LON:123 11.5 AIR:12.2 C DEWPT: 6.0 C WD DIR: 335 WD SPD: 6.3

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POT0	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	12.806	33.291	0.0	25.107	25.108	12.806	25.107	29.516	33.828	38.044	.0000	0.0	497.5	0.3092
10.0	12.796	33.291	9.9	25.109	25.155	12.795	25.110	29.519	33.831	38.047	.0285	0.0	497.6	0.3072
20.0	12.841	33.325	19.9	25.127	25.217	12.838	25.127	29.535	33.846	38.061	.0568	3.0	498.0	0.3433
40.0	12.860	33.342	39.7	25.136	25.316	12.855	25.137	29.545	33.855	38.070	.1134	1.5	498.4	0.3606
44.7	12.432	33.316	44.4	25.199	25.399	12.426	25.200	29.616	33.934	38.158	.1265	101.5	497.0	0.2557
48.1	11.000	33.230	47.7	25.397	25.614	10.994	25.398	29.845	34.192	38.444	.1356	86.7	492.0	-0.0858
51.7	10.000	33.207	51.3	25.552	25.786	9.994	25.553	30.020	34.389	38.661	.1445	135.0	488.5	-0.2822
55.0	9.796	33.224	54.6	25.599	25.849	9.790	25.600	30.072	34.445	38.720	.1527	31.8	487.9	-0.3037
60.0	9.572	33.325	59.6	25.714	25.987	9.565	25.715	30.192	34.569	38.849	.1643	106.3	487.2	-0.2606
65.3	9.542	33.400	64.8	25.779	26.075	9.535	25.780	30.256	34.633	38.913	.1762	56.8	487.3	-0.2057
67.1	9.613	33.441	66.6	25.799	26.104	9.606	25.800	30.275	34.650	38.928	.1801	39.5	487.6	-0.1609
80.0	9.228	33.596	79.4	25.982	26.346	9.219	25.984	30.466	34.848	39.133	.2075	40.3	486.6	-0.1016
80.5	9.213	33.600	79.9	25.988	26.354	9.204	25.989	30.472	34.854	39.139	.2084	40.3	486.6	-0.1005
81.3	9.181	33.607	80.7	25.999	26.369	9.172	26.000	30.483	34.866	39.152	.2101	40.4	486.5	-0.1001
87.8	9.000	33.659	87.1	26.068	26.468	8.991	26.070	30.556	34.943	39.232	.2230	45.6	486.0	-0.0877
100.0	8.718	33.699	99.2	26.143	26.599	8.708	26.145	30.637	35.030	39.325	.2462	7.1	485.2	-0.1015
109.1	8.639	33.753	108.3	26.198	26.695	8.628	26.200	30.694	35.088	39.384	.2631	21.5	485.1	-0.0705
113.7	8.636	33.800	112.8	26.236	26.753	8.624	26.237	30.731	35.125	39.421	.2713	15.1	485.2	-0.0339
146.8	8.205	33.924	145.7	26.398	27.068	8.190	26.400	30.903	35.306	39.610	.3281	14.8	484.3	-0.0017
150.0	8.124	33.923	148.8	26.409	27.094	8.109	26.412	30.916	35.320	39.626	.3334	9.3	484.1	-0.0152
158.2	8.000	33.933	157.0	26.436	27.158	7.984	26.438	30.945	35.352	39.661	.3467	8.5	483.7	-0.0256
192.8	7.648	34.000	191.3	26.540	27.421	7.629	26.542	31.057	35.472	39.788	.4006	7.9	483.1	-0.0243
200.0	7.559	34.008	198.4	26.559	27.474	7.540	26.562	31.079	35.495	39.813	.4116	13.6	482.9	-0.0305
220.1	7.340	34.017	218.4	26.597	27.604	7.319	26.600	31.122	35.543	39.866	.4412	7.5	482.3	-0.0549
250.6	7.000	34.037	248.6	26.660	27.808	6.977	26.663	31.193	35.622	39.952	.4850	3.4	481.6	-0.0864
329.4	6.176	34.072	326.7	26.796	28.311	6.148	26.800	31.349	35.798	40.147	.5907	9.9	479.7	-0.1687
337.9	6.000	34.064	335.2	26.813	28.367	5.971	26.816	31.370	35.823	40.176	.6017	8.4	479.1	-0.1975
400.0	5.937	`4.169	396.7	26.904	28.742	5.903	26.908	31.463	35.916	40.270	.6780	2.8	480.0	-0.1221
473.6	5.484	34.200	469.6	26.984	29.164	5.445	26.989	31.555	36.019	40.383	.7628	0.4	479.4	-0.1530
481.7	5.438	34.207	477.6	26.995	29.213	5.398	27.000	31.567	36.032	40.397	.7718	6.3	479.4	-0.1530
600.0	5.157	34.324	594.7	27.121	29.884	5.108	27.126	31.700	36.171	40.542	.8954	0.6	480.4	-0.0938
628.4	5.000	34.330	622.8	27.144	30.038	4.950	27.150	31.727	36.202	40.577	.9235	3.7	480.2	-0.1072
696.1	4.709	34.351	689.8	27.194	30.403	4.654	27.200	31.784	36.267	40.649	.9883	2.0	480.2	-0.1228
794.3	4.336	34.400	787.0	27.273	30.938	4.275	27.280	31.874	36.366	40.756	.0765	3.2	480.3	-0.1251
800.0	4.313	34.403	792.6	27.278	30.969	4.252	27.284	31.879	36.371	40.763	.0814	1.4	480.3	-0.1253
918.1	4.000	34.436	909.4	27.337	31.575	3.931	27.344	31.947	36.447	40.846	.1798	0.8	481.0	-0.1318
1000.0	3.813	34.461	990.3	27.376	31.992	3.739	27.384	31.991	36.496	40.900	.2444	1.2	481.6	-0.1311
1033.9	3.727	34.471	1023.8	27.393	32.166	3.651	27.400	32.010	36.518	40.923	.2703	1.5	481.8	-0.1317
1328.5	3.000	34.525	1314.6	27.505	33.642	2.906	27.514	32.143	36.669	41.093	.4784	0.3	483.7	-0.1577
1500.0	2.690	34.553	1483.7	27.555	34.483	2.586	27.565	32.203	36.737	41.169	.5869	0.7	485.2	-0.1631
1652.0	2.468	34.572	1633.4	27.590	35.216	2.354	27.600	32.244	36.784	41.222	.6770	0.8	486.9	-0.1670

1862.0	2.197	34.600	1840.2	27.635	36.224	2.069	27.645	32.297	36.845	41.290	.7931	2.5	489.2	-0.1671
2000.0	2.052	34.613	1975.9	27.657	36.876	1.915	27.668	32.324	36.876	41.324	.8653	1.2	490.9	-0.1683
2057.1	2.000	34.618	2032.1	27.665	37.145	1.859	27.676	32.335	36.887	41.337	.8944	0.6	491.7	-0.1680
2500.0	1.772	34.648	2467.0	27.707	39.187	1.596	27.720	32.385	36.945	41.402	.1091	0.0	498.2	-0.1623
3000.0	1.634	34.665	2957.0	27.731	41.445	1.414	27.747	32.417	36.982	41.444	.3402	0.1	506.1	-0.1591
3341.8	1.554	34.675	3291.3	27.745	42.972	1.303	27.763	32.436	37.004	41.469	.4957	2.2	511.6	-0.1570

STATION: 20

1/21/90 2218 GMT LAT: 36 7.5 LON:123 29.0 AIR:11.9 C DEWPT: 7.1 C WD DIR: 326 WD SPD: 5.9

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POT0	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	12.960	33.035	0.0	24.879	24.879	12.960	24.879	29.287	33.597	37.812	.0000	0.0	497.7	0.1368
10.0	12.944	33.035	9.9	24.882	24.928	12.943	24.882	29.290	33.601	37.816	.0306	1.8	497.8	0.1335
20.0	12.898	33.037	19.9	24.892	24.983	12.895	24.893	29.302	33.613	37.830	.0612	1.4	497.8	0.1260
40.0	12.820	33.063	39.7	24.928	25.108	12.815	24.929	29.340	33.652	37.870	.1222	34.8	497.9	0.1309
42.9	12.620	33.105	42.6	24.999	25.192	12.614	25.000	29.415	33.731	37.952	.1308	85.3	497.4	0.1237
47.2	12.468	33.200	46.8	25.102	25.315	12.462	25.103	29.520	33.839	38.062	.1434	60.7	497.0	0.1694
57.3	12.000	33.190	56.9	25.183	25.442	11.993	25.184	29.611	33.938	38.171	.1717	42.1	495.6	0.0701
58.1	11.803	33.163	57.7	25.199	25.461	11.796	25.200	29.631	33.962	38.199	.1740	59.9	494.9	0.0102
60.0	11.338	33.094	59.6	25.231	25.502	11.331	25.232	29.673	34.015	38.260	.1793	57.0	493.3	-0.1325
62.4	11.000	33.031	61.9	25.242	25.524	10.993	25.244	29.692	34.041	38.293	.1858	17.5	492.0	-0.2454
64.0	10.602	33.000	63.5	25.288	25.578	10.595	25.290	29.746	34.103	38.364	.1902	90.0	490.6	-0.3423
67.8	10.000	32.923	67.3	25.330	25.638	9.992	25.332	29.801	34.172	38.446	.2003	8.1	488.4	-0.5100
76.2	9.808	32.970	75.6	25.398	25.745	9.800	25.400	29.874	34.248	38.525	.2224	26.0	487.9	-0.5052
78.6	9.777	33.000	78.0	25.427	25.785	9.768	25.429	29.903	34.278	38.555	.2285	53.0	487.9	-0.4862
80.0	9.778	33.053	79.4	25.468	25.832	9.769	25.470	29.944	34.319	38.596	.2320	99.6	488.0	-0.4433
86.4	9.890	33.200	85.8	25.565	25.957	9.880	25.567	30.037	34.408	38.682	.2477	36.6	488.6	-0.3067
88.4	9.878	33.241	87.7	25.599	26.000	9.868	25.600	30.071	34.442	38.716	.2526	53.1	488.7	-0.2759
100.0	9.488	33.377	99.2	25.769	26.224	9.477	25.771	30.249	34.627	38.908	.2796	68.0	487.6	-0.2330
101.3	9.529	33.400	100.5	25.780	26.241	9.518	25.782	30.259	34.636	38.916	.2825	47.6	487.8	-0.2078
103.2	9.558	33.429	102.4	25.798	26.267	9.547	25.800	30.276	34.652	38.931	.2867	29.6	488.0	-0.1803
114.4	9.000	33.534	113.5	25.970	26.491	8.988	25.972	30.459	34.847	39.137	.3107	48.4	486.3	-0.1880
117.9	8.919	33.553	117.0	25.998	26.535	8.906	26.000	30.489	34.879	39.171	.3178	11.6	486.0	-0.1852
125.8	8.780	33.600	124.8	26.056	26.629	8.767	26.058	30.550	34.943	39.236	.3336	37.5	485.7	-0.1701
137.1	8.449	33.716	136.0	26.198	26.824	8.435	26.200	30.699	35.098	39.398	.3548	49.8	484.8	-0.1294
148.2	8.350	33.800	147.1	26.279	26.955	8.335	26.281	30.781	35.181	39.483	.3748	20.0	484.7	-0.0780
150.0	8.346	33.822	148.8	26.297	26.981	8.331	26.299	30.799	35.199	39.501	.3779	32.4	484.8	-0.0612
164.9	8.266	33.935	163.6	26.398	27.150	8.249	26.400	30.901	35.302	39.605	.4031	16.9	484.9	0.0160
179.4	8.000	33.958	178.0	26.456	27.275	7.982	26.459	30.966	35.372	39.681	.4266	24.3	484.1	-0.0054
200.0	7.839	33.989	198.4	26.503	27.417	7.819	26.506	31.016	35.427	39.739	.4591	14.7	483.9	-0.0050
239.8	7.168	33.987	237.9	26.597	27.696	7.146	26.600	31.126	35.552	39.879	.5189	4.3	482.0	-0.1031
255.7	7.000	33.975	253.7	26.611	27.783	6.976	26.614	31.144	35.574	39.904	.5421	6.0	481.6	-0.1359
286.2	6.629	34.000	283.9	26.681	27.994	6.603	26.684	31.224	35.662	40.000	.5854	9.6	480.6	-0.1662
354.0	6.361	34.101	351.1	26.796	28.421	6.330	26.800	31.345	35.789	40.133	.6757	5.1	480.8	-0.1214
390.5	6.000	34.122	387.3	26.859	28.654	5.966	26.863	31.417	35.869	40.222	.7218	6.8	480.1	-0.1510
400.0	5.819	34.109	396.7	26.871	28.711	5.785	26.875	31.433	35.890	40.247	.7334	2.2	479.5	-0.1842
495.7	5.021	34.146	491.5	26.996	29.283	4.982	27.000	31.578	36.054	40.429	.8444	2.4	477.9	-0.2499
502.1	5.000	34.155	497.8	27.005	29.321	4.960	27.009	31.588	36.065	40.440	.8514	3.9	477.9	-0.2452
535.1	4.884	34.200	530.5	27.054	29.523	4.842	27.059	31.640	36.119	40.497	.8870	5.4	478.0	-0.2228
551.5	5.000	34.233	546.8	27.067	29.610	4.956	27.072	31.650	36.126	40.501	.9041	1.9	478.8	-0.1838
600.0	5.026	34.294	594.8	27.112	29.877	4.978	27.118	31.695	36.169	40.544	.9537	3.7	479.8	-0.1323
609.0	5.000	34.303	603.7	27.122	29.929	4.951	27.128	31.706	36.181	40.556	.9628	2.8	479.8	-0.1287

692.7	4.603	34.337	686.5	27.194	30.390	4.549	27.200	31.788	36.273	40.657	.0437	5.6	479.6	-0.1456
800.0	4.341	34.398	792.6	27.271	30.962	4.280	27.278	31.872	36.363	40.754	.1402	2.6	480.4	-0.1262
823.8	4.235	34.400	816.2	27.284	31.086	4.172	27.290	31.887	36.382	40.775	.1607	1.9	480.4	-0.1358
896.4	4.000	34.430	887.9	27.332	31.471	3.933	27.339	31.942	36.442	40.841	.2211	1.4	480.6	-0.1367
988.8	3.673	34.464	979.2	27.393	31.960	3.601	27.400	32.011	36.520	40.926	.2934	3.1	480.8	-0.1426
1000.0	3.658	34.469	990.3	27.398	32.018	3.585	27.405	32.017	36.526	40.933	.3018	0.5	480.9	-0.1400
1326.1	3.000	34.526	1312.2	27.506	33.632	2.907	27.514	32.144	36.670	41.094	.5306	1.4	483.6	-0.1570
1500.0	2.737	34.556	1483.7	27.554	34.480	2.632	27.563	32.200	36.733	41.163	.6407	0.5	485.5	-0.1567
1649.9	2.502	34.576	1631.4	27.590	35.206	2.388	27.600	32.243	36.782	41.219	.7299	0.8	487.0	-0.1610
1828.0	2.250	34.600	1806.7	27.631	36.063	2.124	27.641	32.291	36.837	41.281	.8294	1.9	488.9	-0.1628
2000.0	2.059	34.615	1975.9	27.658	36.877	1.922	27.669	32.325	36.876	41.325	.9197	0.0	491.0	-0.1662
2074.1	2.000	34.620	2048.8	27.667	37.223	1.857	27.678	32.336	36.889	41.339	.9573	0.0	492.0	-0.1669
2500.0	1.779	34.646	2467.0	27.705	39.184	1.603	27.718	32.383	36.943	41.400	.1650	0.4	498.2	-0.1633
3000.0	1.627	34.666	2957.0	27.732	41.446	1.407	27.748	32.418	36.984	41.445	.3969	1.3	506.1	-0.1587
3500.0	1.546	34.677	3445.9	27.747	43.669	1.279	27.766	32.440	37.009	41.474	.6237	0.2	514.3	-0.1560
3605.9	1.507	34.682	3549.3	27.754	44.143	1.230	27.774	32.448	37.019	41.485	.6711	1.6	516.0	-0.1549

STATION: 21

1/22/90 1853 GMT LAT: 35 57.2 LON:123 50.4 AIR:11.3 C DEWPT: 9.3 C WD DIR: 346 WD SPD: 8.8

P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POT0	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	13.069	32.978	0.0	24.813	24.814	13.069	24.813	29.219	33.528	37.741	.0000	0.0	1498.0	0.1136
10.0	13.071	32.980	9.9	24.814	24.860	13.070	24.814	29.221	33.529	37.743	.0317	0.9	1498.2	0.1152
20.0	13.052	32.976	19.9	24.815	24.905	13.049	24.815	29.222	33.531	37.745	.0625	1.5	1498.3	0.1085
26.9	13.000	32.972	2.7	24.822	24.943	12.997	24.823	29.231	33.540	37.755	.0841	9.0	1498.2	0.0948
40.0	12.724	32.954	3.7	24.863	25.042	12.719	24.864	29.277	33.593	37.813	.1247	4.5	1497.5	0.0248
60.0	12.479	32.981	5.6	24.930	25.200	12.471	24.932	29.350	33.670	37.895	.1862	52.2	1497.1	-0.0030
63.1	12.157	32.989	6.6	24.998	25.283	12.149	25.000	29.424	33.751	37.981	.1956	82.0	1496.0	-0.0596
64.1	12.000	32.991	6.6	25.029	25.318	11.992	25.030	29.458	33.787	38.021	.1986	94.5	1495.5	-0.0890
68.8	11.000	32.951	6.3	25.180	25.492	10.992	25.182	29.630	33.980	38.233	.2119	85.0	1492.0	-0.3092
70.0	10.824	32.935	6.5	25.199	25.516	10.816	25.200	29.652	34.006	38.263	.2154	45.2	1491.4	-0.3544
77.2	10.000	32.881	7.6	25.298	25.648	9.991	25.299	29.769	34.140	38.414	.2349	35.0	1488.5	-0.5436
80.0	9.974	32.893	7.4	25.311	25.674	9.965	25.312	29.783	34.154	38.429	.2424	13.0	1488.5	-0.5387
84.2	10.000	32.913	8.6	25.323	25.705	9.991	25.325	29.794	34.165	38.439	.2535	4.2	1488.7	-0.5175
90.2	10.146	33.000	8.5	25.366	25.775	10.136	25.368	29.834	34.201	38.471	.2694	39.4	1489.4	-0.4227
93.3	10.160	33.044	9.6	25.398	25.822	10.149	25.400	29.866	34.232	38.501	.2775	18.3	1489.6	-0.3850
95.0	10.000	33.084	9.3	25.456	25.887	9.989	25.458	29.927	34.296	38.568	.2817	94.0	1489.0	-0.3806
100.0	9.888	33.145	9.2	25.523	25.977	9.877	25.525	29.995	34.367	38.641	.2943	47.1	1488.8	-0.3508
103.8	9.833	33.200	103.0	25.574	26.046	9.821	25.576	30.048	34.420	38.695	.3036	34.6	1488.7	-0.3164
105.5	9.832	33.230	104.7	25.598	26.077	9.820	25.600	30.071	34.444	38.718	.3076	44.7	1488.8	-0.2922
118.7	9.659	33.400	117.8	25.759	26.298	9.646	25.761	30.235	34.610	38.887	.3382	11.4	1488.6	-0.1861
124.3	9.604	33.437	123.4	25.798	26.362	9.590	25.800	30.275	34.651	38.929	.3506	36.5	1488.6	-0.1655
135.7	9.381	33.600	134.7	25.961	26.577	9.366	25.964	30.442	34.821	39.103	.3748	47.1	1488.1	-0.0731
137.5	9.266	33.623	136.5	25.998	26.623	9.251	26.000	30.481	34.863	39.147	.3784	70.4	1487.7	-0.0734
144.3	9.000	33.650	143.2	26.060	26.717	8.985	26.063	30.550	34.937	39.226	.3920	53.9	1486.9	-0.0956
150.0	8.866	33.668	148.9	26.096	26.779	8.850	26.098	30.588	34.978	39.270	.4032	4.6	1486.5	-0.1024
160.3	8.761	33.776	159.1	26.197	26.928	8.744	26.200	30.691	35.082	39.376	.4229	57.9	1486.4	-0.0329
162.3	8.747	33.800	161.1	26.218	26.957	8.730	26.220	30.712	35.103	39.397	.4264	33.3	1486.4	-0.0163
198.0	8.232	33.928	196.5	26.397	27.300	8.212	26.400	30.902	35.304	39.608	.4883	14.3	1485.3	0.0054
200.0	8.236	33.948	198.4	26.412	27.324	8.216	26.415	30.917	35.318	39.622	.4916	24.1	1485.4	0.0217
216.4	8.000	33.969	214.7	26.464	27.45	7.978	26.467	30.974	35.381	39.690	.5180	6.6	1484.7	0.0033
226.1	7.962	34.000	224.3	26.494	27.526	7.939	26.497	31.005	35.412	39.722	.5334	18.1	1484.8	0.0219

279.7	7.620	34.067	277.5	26.596	27.874	7.593	26.600	31.115	35.531	39.847	.6147	6.2	1484.5	0.0247
314.8	7.000	34.039	312.3	26.661	28.103	6.971	26.666	31.196	35.625	39.955	.6654	8.7	1482.6	-0.0851
388.5	6.636	34.147	385.3	26.796	28.576	6.601	26.800	31.339	35.775	40.113	.7653	8.2	1482.6	-0.0493
400.0	6.603	34.158	396.7	26.809	28.642	6.567	26.813	31.353	35.791	40.129	.7801	4.3	1482.7	-0.0447
438.7	6.000	34.130	435.0	26.865	28.881	5.962	26.870	31.424	35.876	40.228	.8287	0.3	1480.9	-0.1448
511.0	5.492	34.200	506.6	26.983	29.335	5.450	26.988	31.554	36.018	40.382	.9133	3.9	1480.1	-0.1520
521.1	5.490	34.214	516.6	26.994	29.392	5.447	27.000	31.566	36.030	40.394	.9246	3.3	1480.3	-0.1410
600.0	5.004	34.258	594.8	27.086	29.851	4.956	27.091	31.669	36.145	40.520	.0090	1.2	1479.7	-0.1637
600.4	5.000	34.257	595.2	27.086	29.854	4.952	27.091	31.670	36.146	40.521	.0095	1.2	1479.7	-0.1645
707.1	4.644	34.342	700.7	27.193	30.454	4.589	27.200	31.786	36.270	40.654	.1140	3.8	1480.1	-0.1376
800.0	4.308	34.394	792.6	27.271	30.963	4.247	27.278	31.873	36.365	40.756	.1976	1.9	1480.3	-0.1328
813.8	4.285	34.400	806.3	27.279	31.034	4.223	27.285	31.881	36.374	40.765	.2095	1.5	1480.4	-0.1306
934.9	4.000	34.449	926.0	27.348	31.662	3.930	27.355	31.958	36.458	40.856	.3101	2.9	1481.3	-0.1215
1000.0	3.848	34.470	990.3	27.380	31.995	3.774	27.387	31.994	36.498	40.900	.3612	0.4	1481.7	-0.1205
1500.0	2.775	34.553	1414.7	27.548	34.473	2.670	27.557	32.193	36.725	41.155	.7056	0.7	1485.6	-0.1558
1678.0	2.510	34.577	16591	27.590	35.333	2.293	27.600	32.243	36.782	41.219	.8123	3.5	1487.5	-0.1595
1903.0	2.158	34.600	1880.6	27.638	36.415	2.027	27.648	32.302	36.850	41.296	.9371	1.7	1489.7	-0.1702
2000.0	2.046	34.607	1975.9	27.653	36.872	1.909	27.664	32.320	36.872	41.321	.9878	0.9	1490.9	-0.1735
2064.0	2.000	34.616	2038.9	27.664	37.174	1.858	27.675	32.333	36.886	41.336	.0206	0.4	1491.8	-0.1700
2500.0	1.765	34.646	2467.1	27.706	39.187	1.589	27.719	32.384	36.945	41.402	.2326	2.2	1498.2	-0.1642
3000.0	1.618	34.667	2957.0	27.734	41.448	1.399	27.750	32.420	36.986	41.448	.4631	0.1	1506.1	-0.1587
3500.0	1.544	34.677	3445.9	27.747	43.669	1.277	27.766	32.440	37.009	41.474	.6894	0.3	1514.3	-0.1562
3928.0	1.492	34.687	3863.5	27.759	45.552	1.181	27.781	32.458	37.029	41.497	.8814	0.0	1521.5	-0.1521

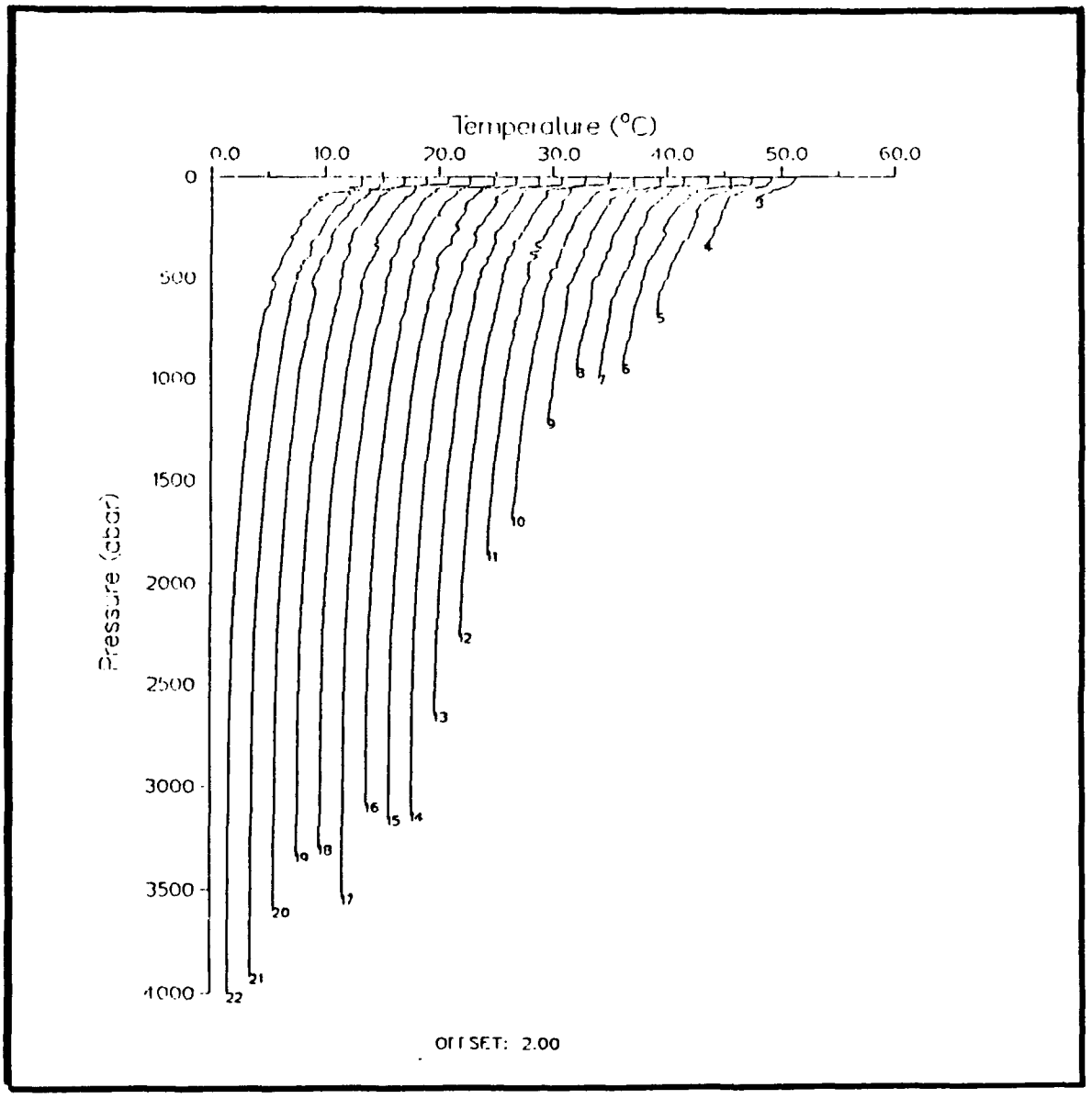
STATION: 22

1/22/90 1218 GMT LAT: 35 45.7 LON:124 12.8 AIR:10.9 C DEWPT: 7.6 C WD DIR: 345 WD SPD: 7.3

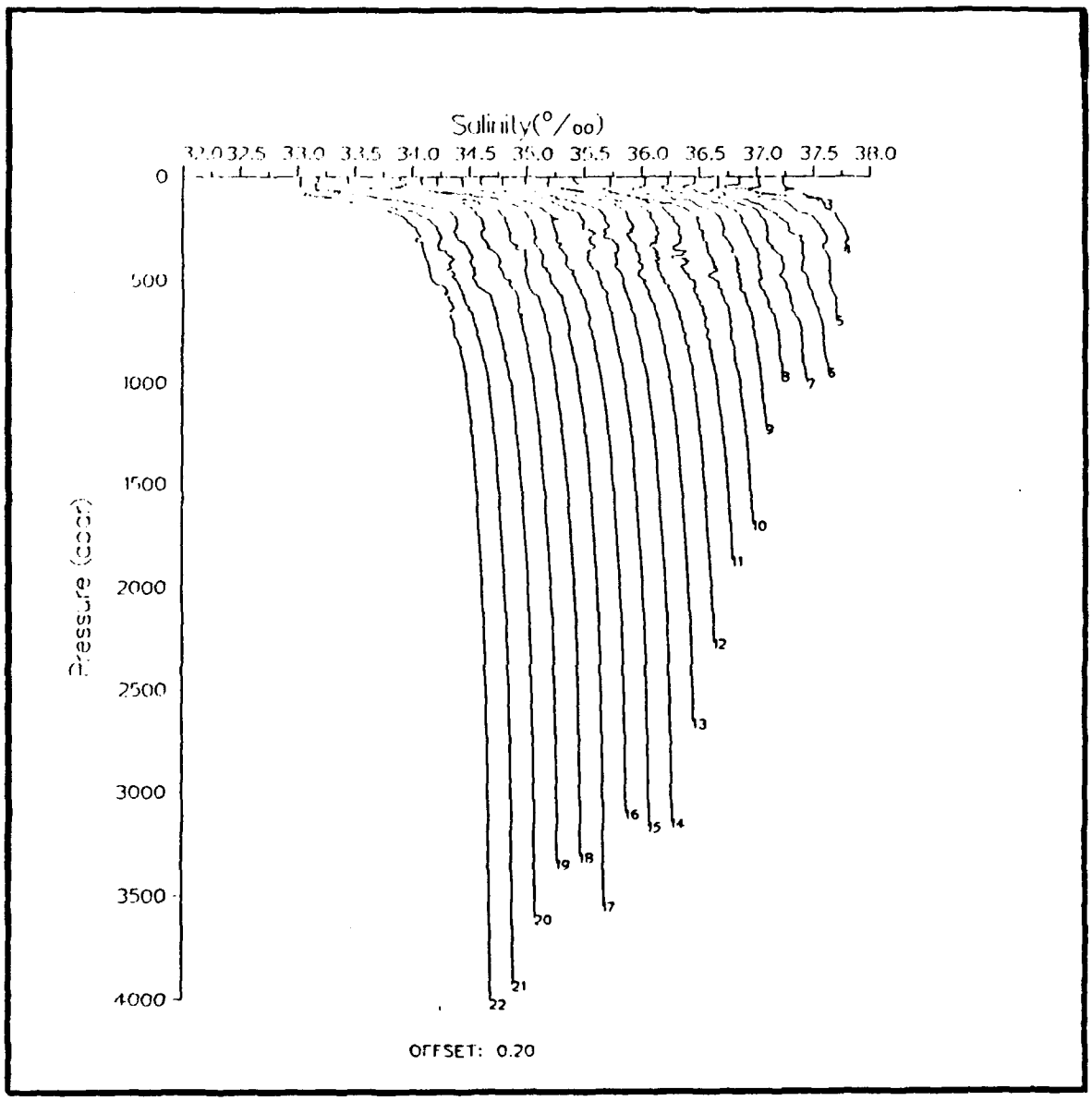
P(DB)	TEMP	SAL	Z(M)	RHO	DEN AN	POTO	SIG0	SIG1	SIG2	SIG3	D	NSQ	SV	SPICE
0.0	13.130	33.024	0.0	24.837	24.837	13.130	24.837	29.241	33.548	37.760	.0000	0.0	498.3	0.1627
10.0	13.141	33.024	9.9	24.835	24.880	13.140	24.835	29.239	33.546	37.758	.0310	1.5	498.5	0.1650
20.0	13.142	33.024	19.9	24.834	24.924	13.139	24.835	29.240	33.546	37.758	.0621	0.3	498.6	0.1652
40.0	13.143	33.024	39.7	24.834	25.014	13.138	24.835	29.240	33.547	37.759	.1243	0.0	499.0	0.1654
51.3	13.000	33.035	50.9	24.871	25.102	12.993	24.872	29.280	33.589	37.804	.1595	56.0	498.7	0.1450
54.3	12.474	33.069	53.9	24.999	25.243	12.467	25.000	29.418	33.738	37.962	.1686	158.8	497.0	0.0670
57.9	12.132	33.200	57.5	25.167	25.427	12.125	25.168	29.591	33.917	38.146	.1790	69.6	496.0	0.1034
60.0	12.349	33.276	59.6	25.184	25.454	12.341	25.185	29.605	33.925	38.150	.1848	27.2	496.9	0.2065
61.7	12.451	33.319	61.2	25.198	25.476	12.443	25.200	29.616	33.934	38.157	.1896	26.2	497.3	0.2609
75.6	12.000	33.309	75.0	25.275	25.617	11.990	25.277	29.703	34.031	38.261	.2276	40.7	496.0	0.1648
78.1	11.485	33.200	77.5	25.286	25.639	11.475	25.288	29.725	34.063	38.306	.2344	6.3	494.2	-0.0203
80.0	11.039	33.128	79.4	25.310	25.672	11.029	25.312	29.758	34.106	38.358	.2394	38.7	492.5	-0.1603
80.1	11.000	33.125	79.5	25.315	25.678	10.990	25.317	29.764	34.113	38.365	.2397	45.7	492.4	-0.1694
83.6	10.233	33.061	83.0	25.399	25.777	10.223	25.400	29.864	34.228	38.497	.2488	35.5	489.7	-0.3590
87.1	10.000	33.090	86.4	25.461	25.856	9.990	25.463	29.932	34.301	38.574	.2578	93.5	488.9	-0.3754
88.4	10.000	33.119	87.7	25.484	25.884	9.990	25.486	29.954	34.323	38.596	.2610	80.1	489.0	-0.3523
91.8	10.146	33.200	91.1	25.522	25.938	10.136	25.524	29.988	34.354	38.623	.2696	59.6	489.7	-0.2626
95.2	10.062	33.279	94.5	25.598	26.030	10.051	25.600	30.066	34.432	38.702	.2780	64.9	489.6	-0.2138
98.1	10.000	33.295	97.4	25.621	26.065	9.989	25.623	30.090	34.457	38.729	.2848	19.0	489.4	-0.2123
100.0	9.851	33.273	99.3	25.628	26.082	9.840	25.630	30.101	34.473	38.746	.2893	13.1	488.9	-0.2547
114.2	9.466	33.400	113.3	25.790	26.310	9.454	25.792	30.271	34.650	38.931	.3220	68.8	487.8	-0.2182
115.0	9.564	33.430	114.1	25.798	26.321	9.551	25.800	30.276	34.653	38.931	.3238	45.0	488.2	-0.1781
134.4	9.078	33.585	133.4	25.998	26.609	9.064	26.000	30.485	34.871	39.159	.3650	42.7	487.0	-0.1344
135.3	9.059	33.600	134.3	26.012	26.628	9.045	26.015	30.501	34.887	39.175	.3669	48.3	486.9	-0.1256
139.5	9.000	33.632	138.4	26.047	26.681	8.985	26.049	30.536	34.924	39.212	.3751	30.6	486.8	-0.1093

150.0	8.907	33.742	148.9	26 .	5.830	8.891	26.150	30.638	35.026	39.317	.3954	19.2	486.8	-0.0372
155.6	8.781	33.781	154.4	26.1	5.906	8.765	26.200	30.691	35.082	39.375	.4058	35.9	486.4	-0.0261
159.4	8.698	33.800	158.2	26.225	26.952	8.681	26.228	30.720	35.113	39.407	.4128	27.0	486.2	-0.0241
194.8	8.244	33.930	193.3	26.397	27.285	8.224	26.400	30.901	35.304	39.607	.4737	9.7	485.3	0.0089
200.0	8.111	33.947	198.5	26.430	27.343	8.091	26.433	30.938	35.343	39.649	.4822	23.9	484.9	0.0025
206.4	8.000	33.952	204.8	26.451	27.393	7.979	26.454	30.961	35.368	39.677	.4926	14.9	484.6	-0.0100
232.7	7.754	34.000	230.9	26.524	27.587	7.731	26.527	31.040	35.452	39.766	.5337	2.5	484.1	-0.0089
265.2	7.558	34.055	263.1	26.596	27.808	7.532	26.600	31.117	35.533	39.850	.5825	6.1	484.0	0.0063
300.3	7.000	34.035	297.9	26.658	28.034	6.972	26.662	31.193	35.622	39.952	.6331	3.1	482.4	-0.0879
381.7	6.416	34.110	378.6	26.795	28.547	6.382	26.800	31.344	35.786	40.129	.4 316	4.0	481.5	-0.1073
400.0	6.252	34.127	396.7	26.830	28.667	6.217	26.835	31.382	35.829	40.175	.7670	9.0	481.2	-0.1148
447.8	6.000	34.154	444.1	26.884	28.942	5.961	26.889	31.442	35.895	40.247	.8262	2.4	481.0	-0.1259
509.1	5.376	34.198	504.8	26.995	29.340	5.334	27.000	31.570	36.036	40.403	.8975	4.4	479.6	-0.1673
510.3	5.369	34.200	506.0	26.997	29.347	5.327	27.002	31.572	36.039	40.405	.8988	5.4	479.6	-0.1668
600.0	5.167	34.318	594.8	27.115	29.878	5.118	27.121	31.695	36.166	40.537	.9934	4.9	480.4	-0.0971
640.3	5.000	34.348	634.7	27.157	30.107	4.948	27.163	31.742	36.216	40.591	.0330	6.6	480.4	-0.0932
682.8	4.588	34.335	676.7	27.194	30.345	4.535	27.200	31.788	36.274	40.659	.0734	2.6	479.4	-0.1488
791.3	4.245	34.400	784.0	27.282	30.936	4.185	27.289	31.885	36.379	40.772	.1704	4.5	479.9	-0.1348
800.0	4.218	34.403	792.6	27.288	30.981	4.157	27.295	31.892	36.386	40.780	.1779	1.2	479.9	-0.1352
905.3	4.000	34.452	896.7	27.350	31.529	3.932	27.357	31.959	36.459	40.858	.2641	2.1	480.8	-0.1193
985.9	3.739	34.473	976.4	27.393	31.946	3.667	27.400	32.010	36.516	40.922	.3266	1.5	481.1	-0.1290
1000.0	3.691	34.474	990.3	27.399	32.018	3.618	27.406	32.017	36.524	40.931	.3372	2.4	481.1	-0.1330
1353.9	3.000	34.540	1339.7	27.517	33.770	2.904	27.526	32.156	36.681	41.105	.5819	0.4	484.1	-0.1461
1500.0	2.753	34.561	1483.7	27.556	34.482	2.648	27.566	32.202	36.734	41.165	.6739	0.8	485.5	-0.1514
1652.2	2.511	34.577	1633.7	27.590	35.216	2.396	27.600	32.243	36.782	41.219	.7643	0.7	487.1	-0.1595
1840.1	2.241	34.600	1818.7	27.631	36.119	2.114	27.642	32.292	36.839	41.282	.8693	1.5	489.1	-0.1636
2000.0	2.081	34.613	1976.0	27.655	36.872	1.943	27.666	32.321	36.872	41.320	.9534	1.5	491.1	-0.1661
2110.1	2.000	34.622	2084.2	27.668	37.386	1.854	27.680	32.337	36.891	41.341	.0098	0.0	492.6	-0.1653
2500.0	1.784	34.647	2467.1	27.705	39.185	1.608	27.718	32.383	36.943	41.399	.1995	0.2	498.3	-0.1621
3000.0	1.617	34.666	2957.1	27.733	41.448	1.398	27.749	32.419	36.985	41.447	.4303	0.2	506.1	-0.1595
3500.0	1.541	34.678	3446.0	27.748	43.671	1.274	27.767	32.441	37.010	41.475	.6560	0.0	514.3	-0.1556
4000.0	1.484	34.690	3933.8	27.762	45.868	1.165	27.785	32.461	37.033	41.501	.8801	0.2	522.7	-0.1503
4017.1	1.482	34.689	3950.4	27.761	45.942	1.162	27.784	32.461	37.033	41.501	.8877	1.6	523.0	-0.1512

APPENDIX B: WATERFALL PLOTS

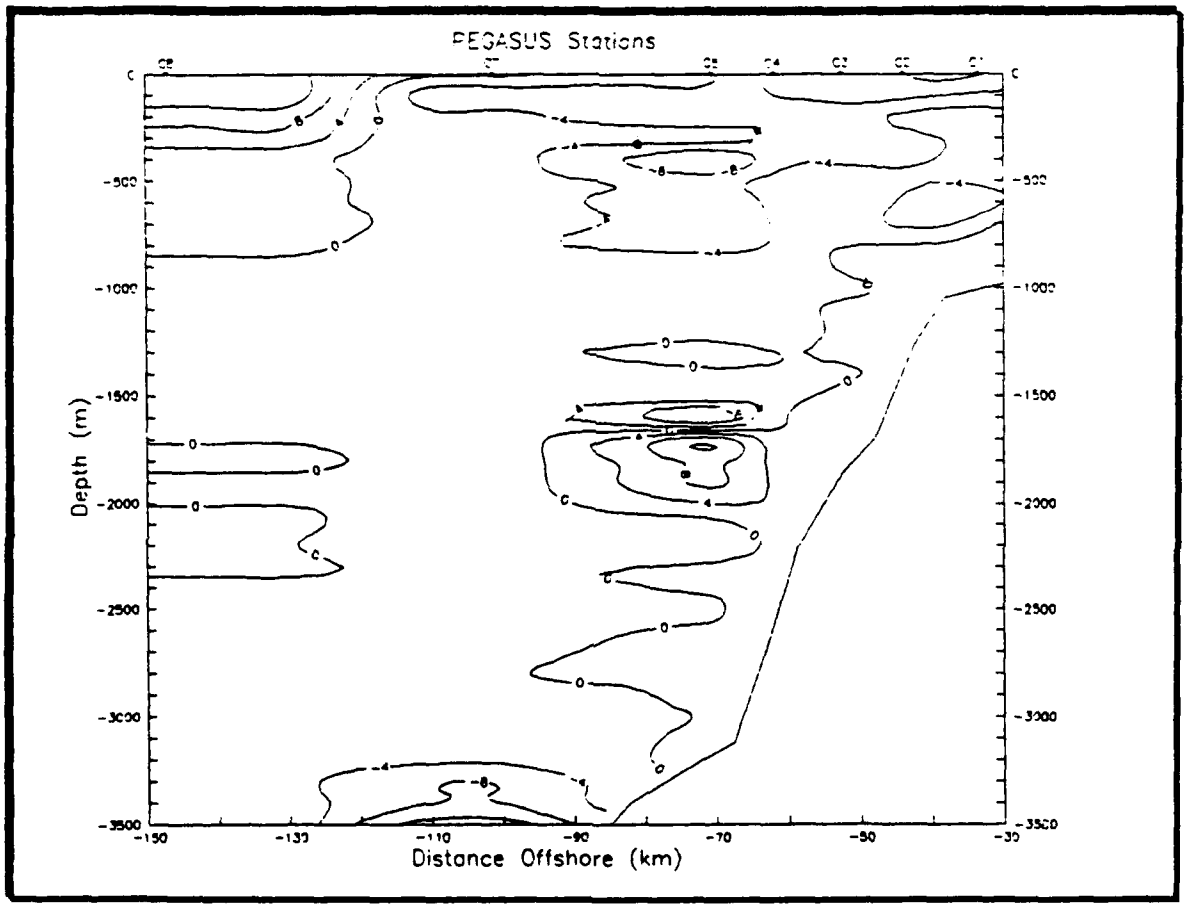


Temperature waterfall plot, CTD stations 3-22.

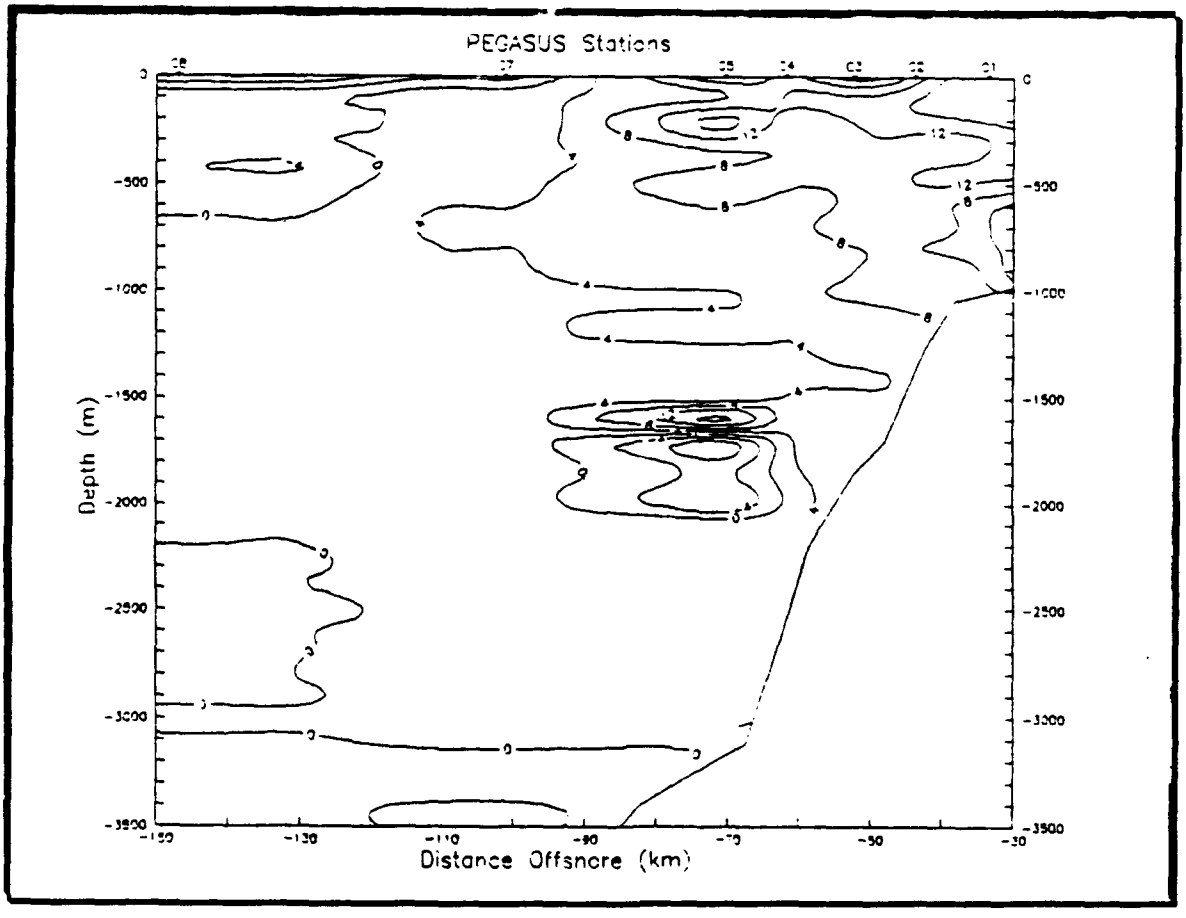


Salinity waterfall plot, CTD stations 3-22

APPENDIX C: FULL DEPTH PEGASUS TRANSECTIONS



PEGASUS U (east-west) full depth velocity transection.



PEGASUS V (north-south) full depth velocity transection.

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